SPECIAL SECTION: FINDING HOME THROUGH FOOD

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CANADIAN Geographic

BEAR CUB RESCUE

INSIDE A SAFE HAVEN
FOR B.C. WILDLIFE

WILD RICE
NURTURING THE GOOD BERRY

ACADIAN APPLES
NOVA SCOTIA'S FORGOTTEN HERITAGE

+

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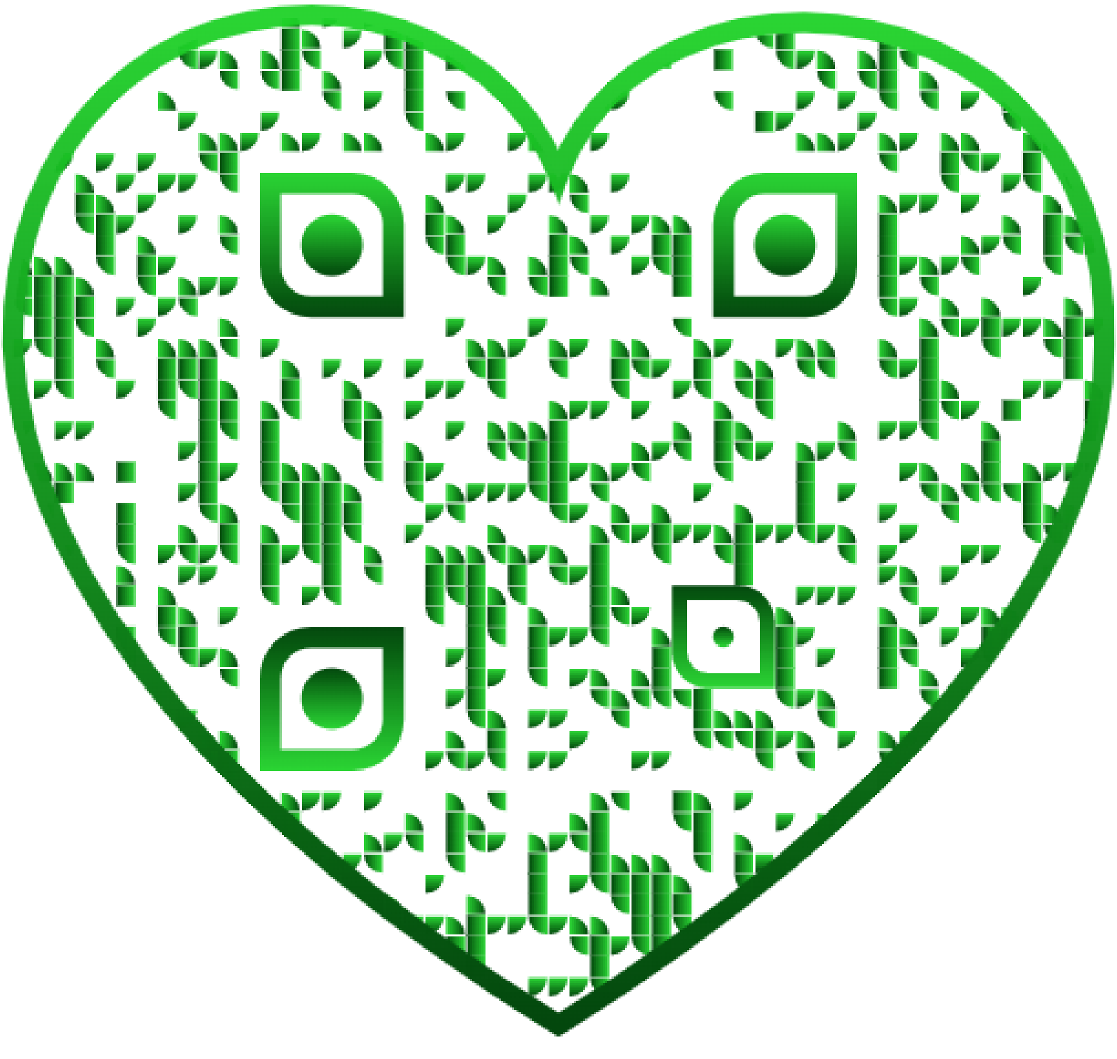

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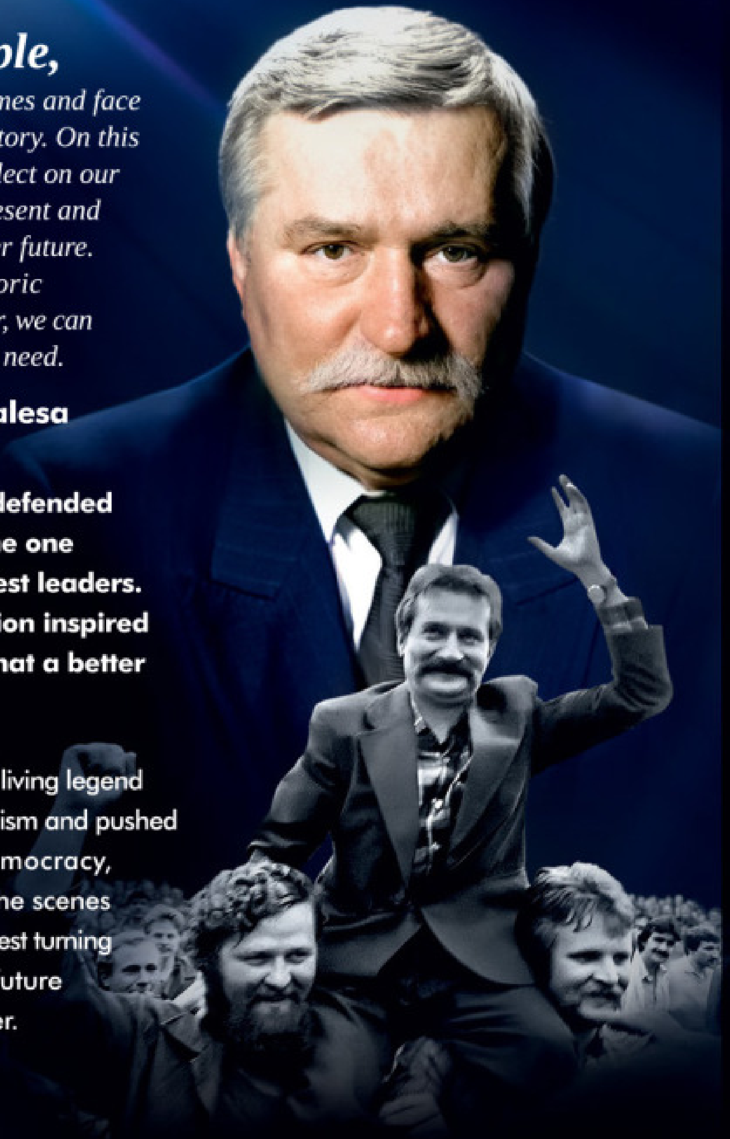

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Canadian Geographic
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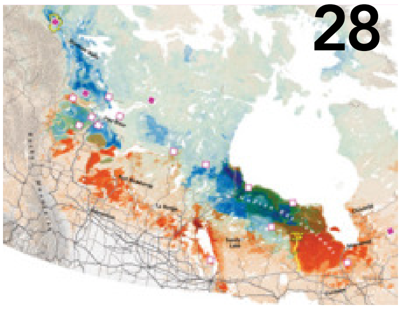

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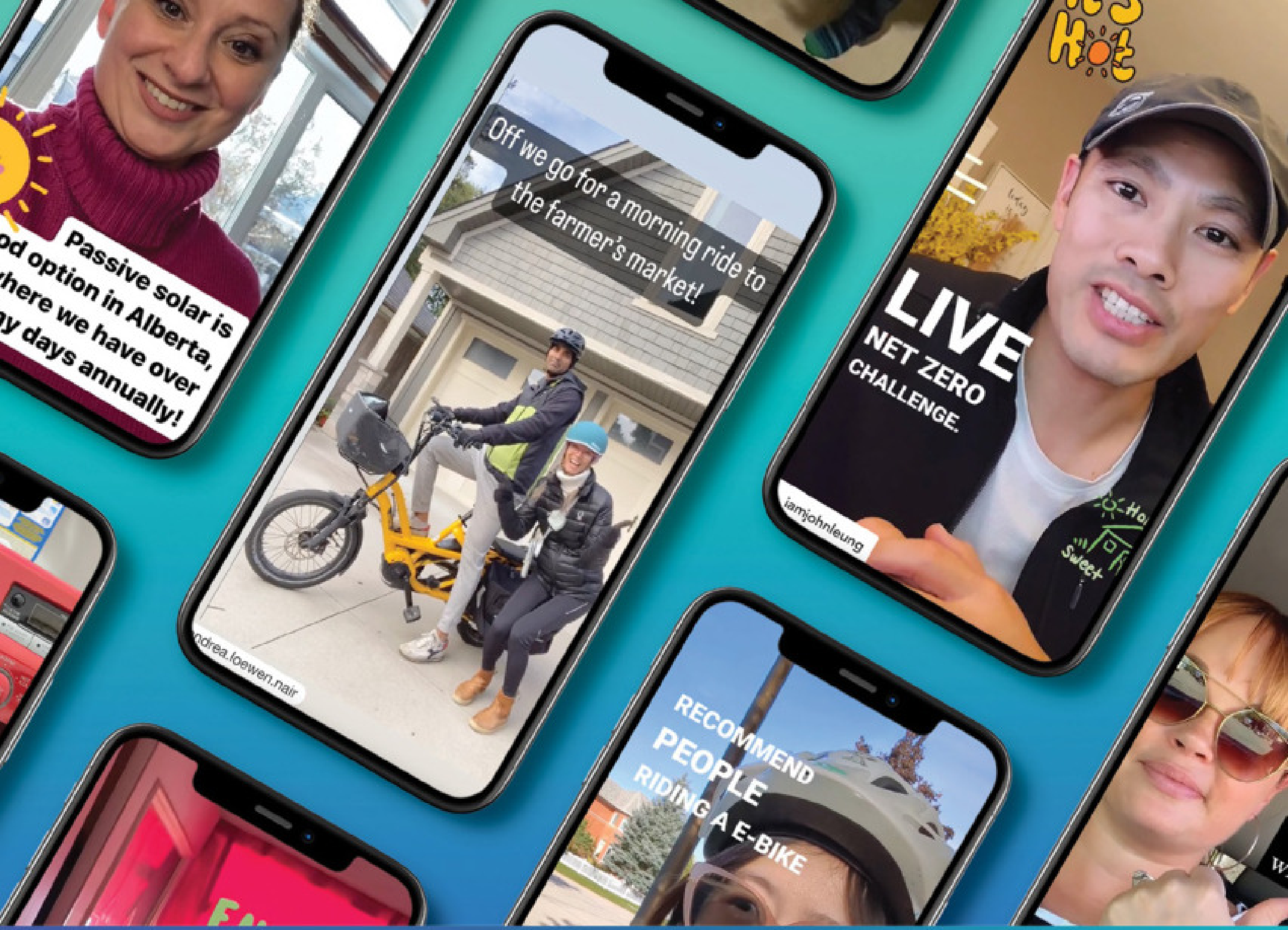
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DIGITAL CONTENTS

DISCOVER

HEALING SPIRITS WORLDWIDE

“Nobody ever, ever, ever does anything on their own.” Carrier Elder Maggie Hodgson will remind you of this important lesson over and over. As the driving force behind the Healing Our Spirit Worldwide gathering and other Indigenous grassroots movements, Hodgson has dedicated her life to improving the health and wellness of Indigenous people, not only in Canada but the world over. Learn more about Hodgson and her life’s work at **cangeo.ca/maggie**.

COMMENT

ON “THE GREAT TURNING”

(MAY/JUNE)

great turning

I was deeply moved by Laurie Sarkadi’s article about eco-anxiety and finding hope in an era of climate crisis. I, too, evacuated Yellowknife in 2023, driving through smouldering forest with my daughter, dog and treasures to save from the flames. Once we returned to a city mercifully untouched by wildfire, I got on with my life. Laurie, on the other hand, saw the big picture. WHY, she wondered, weren’t we all talking about climate change, and what to do about it? We had all just survived a major reckoning, but our conversations revolved around our own stories: when we left, what we took, where we stayed. Laurie is facing the greater dread, grief and distress that comes when you recognize our planet is sick. Her article is a wake-up call. We all need to reflect as deeply as she has about the consequences of how we live. And we need motivation, not just to pack up and run, but to stay and protect the places we love with our choices and voices.

Catherine Pigott
Yellowknife

ON JULY/AUGUST

Geographic

As a subscriber I always enjoy receiving *Canadian Geographic* magazine in the mail. This issue is spectacular and I particularly enjoyed the great essay by Wade Davis. I had the pleasure of meeting him once when he spoke to a Round Square World Conference. The cover of this issue got my attention right away.

David MacLellan
Woodview, Ont.

Really enjoyed your article, “Being Canadian,” in the latest magazine. And, yes, Adolf Plump has certainly brought us together. We did a road trip last year, from B.C. all the way to the Maritimes, and it sure reinforced the idea of what an amazing country we have. In addition, I did a 97-km-long hike on Baffin Island that again reinforced that same idea.

Jim Hoover
Parson, B.C.

CORRECTION

MAY/JUNE 2025)

In “Digital Contents” on page 6, the Porcupine caribou herd migrates approximately 2,400 kilometres annually, rather than 250,000 kilometres, which, as a few readers pointed out, would be greater than circumnavigating the Earth six times!

Travel

HOP TO IT
There's so much to do and see in St. Vincent and the Grenadines, why not go island hopping? Writer Sarah Brown explores this Caribbean gem, taking in the unique landscapes, culture and top-notch dining on a handful of islands. Get her list of must-do experiences at **cangeo.ca/islandhop**

EXPLORE

EPIC ELLESMERE
Relentless sub-30 degrees Celsius temperatures, whiteouts and punishing terrain met RCGS Explorer-in-Residence Ray Zahab and his exploring partner Kevin Vallely as they completed an extraordinary 500-kilometre ski journey across Ellesmere Island last spring. Join *Explore* host David McGuffin as Zahab and Vallely share stories from the trail, reflect on moments of awe and offer a rare glimpse into a part of Canada few will ever see. **cangeo.ca/explore**

Geographic

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CLOCKWISE FROM TOP LEFT: CRAIG RICHARDS, RCA COLLECTION OF PETER POOLE; SARAH BROWN; KEVIN VALLELY

Editors Alex, Abi and Michela (left to right) plan an upcoming Can Geo feast.

JAVIER FRUTOS / CAN GEO

WHAT'S COOKING?

ONE OF THE MOST FUN things about working for a 95-year-old magazine is looking back at how previous editorial teams interpreted *Canadian Geographic's* mission and mandate — and put their own stamp on the mag.

Recently, senior editor Abi Hayward and I went down an internet wormhole, as one does, to old Can Geo web pages in the Internet Archive's Wayback Machine. As we time travelled to January 2002 ("Take me back to that era of the internet, honestly!"), we noticed a banner ad calling for entries to something called The Great Canadian Feast. To our utter delight, this turned out to be a cookbook published by Can Geo in 2002, consisting of recipes crowdsourced from readers all across the country. The discovery felt serendipitous given that plans were already well underway for the (lightly) food-themed issue you hold in your hands.

Of course, we weren't surprised that our editorial predecessors decided to dig into the geography of food. Our culinary traditions, and by extension our cultures, are inextricably connected to place and the ingredients harvested from land and sea for sustenance and pleasure. As the late, great Anthony Bourdain put it, "food is everything we are" — an idea we've borrowed for our exploration of food-as-community for diasporas in Canada on page 38. It's also a through-line in our stories on Nova Scotia's mysterious Belliveau apple (page 64) and Manoomin, the wild grain that the Anishinaabe of the Great Lakes watershed consider both a source of nourishment and a relative (page 52).

As for *The Great Canadian Feast*, Abi hunted down a copy, and we'll be trying out some of the recipes in the "Can Geo test kitchen" — make sure you're following us on Instagram @cangeo to see our own great Canadian feast.

—Alexandra Pope

To comment, please email editor@canadiangeographic.ca or visit cangeo.ca.

For inside details on the magazine, follow editor Alexandra Pope on Bluesky (@xelaepop.bsky.social) and Instagram (@xela.explores).

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BIG PICTURE

Celebrating Canada's Grandeur

PHOTO BY **JAVIER FRUTOS**

The Fraser River wends its way under the cloud-covered precipice of Mount Robson, the highest peak in the Rocky Mountains. Mount Robson Provincial Park protects the headwaters of this mighty 1,378-kilometre river, which begins as a tiny trickle at Fraser Pass, then slowly meanders northwest along the Rocky Mountain Trench before bending south at Prince George, eventually emptying into the Salish Sea.

Javier Frutos (@javiers_wonderplanet) is *Canadian Geographic*'s brand and creative director.

EXPOSURE

Showcasing our photo community

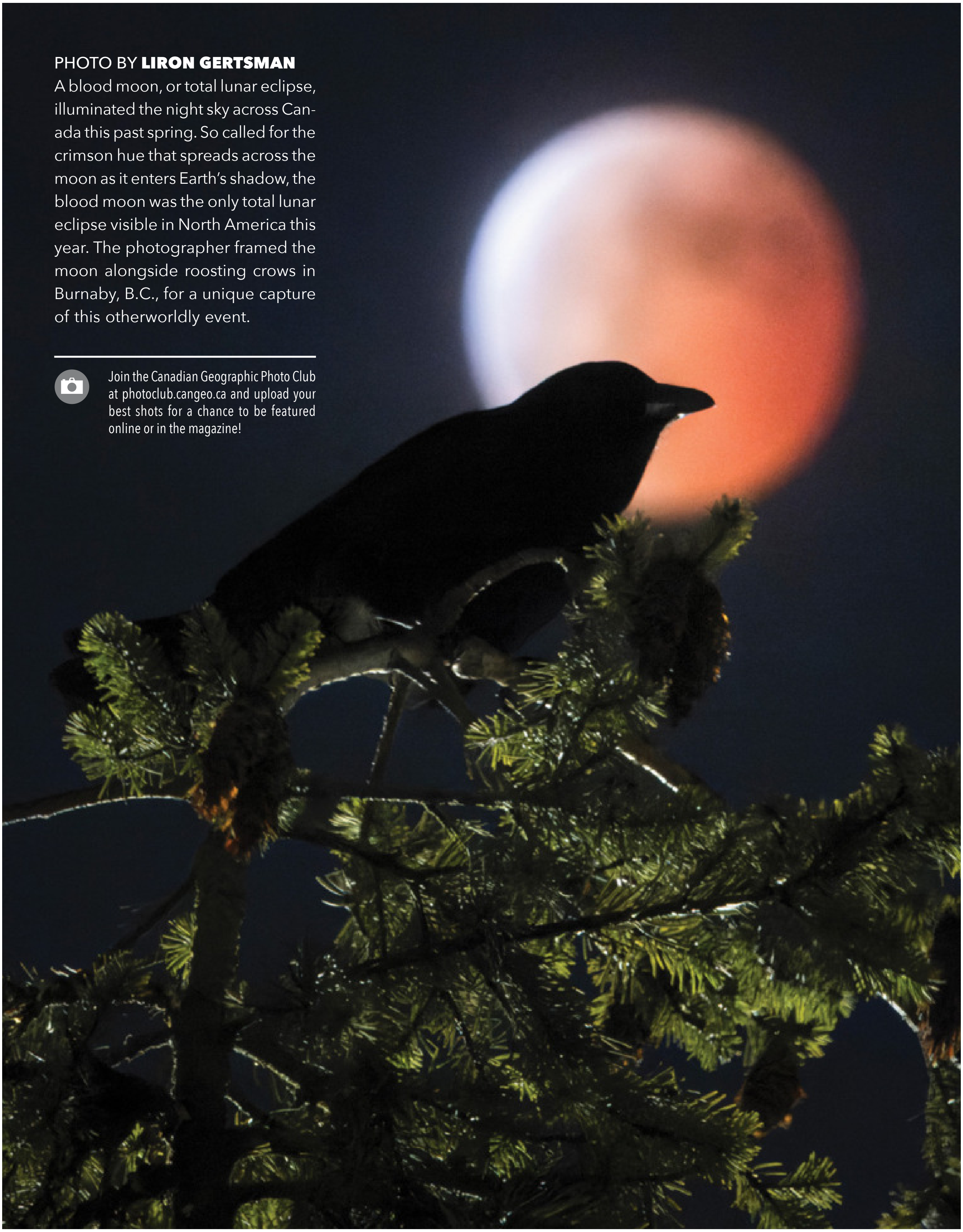
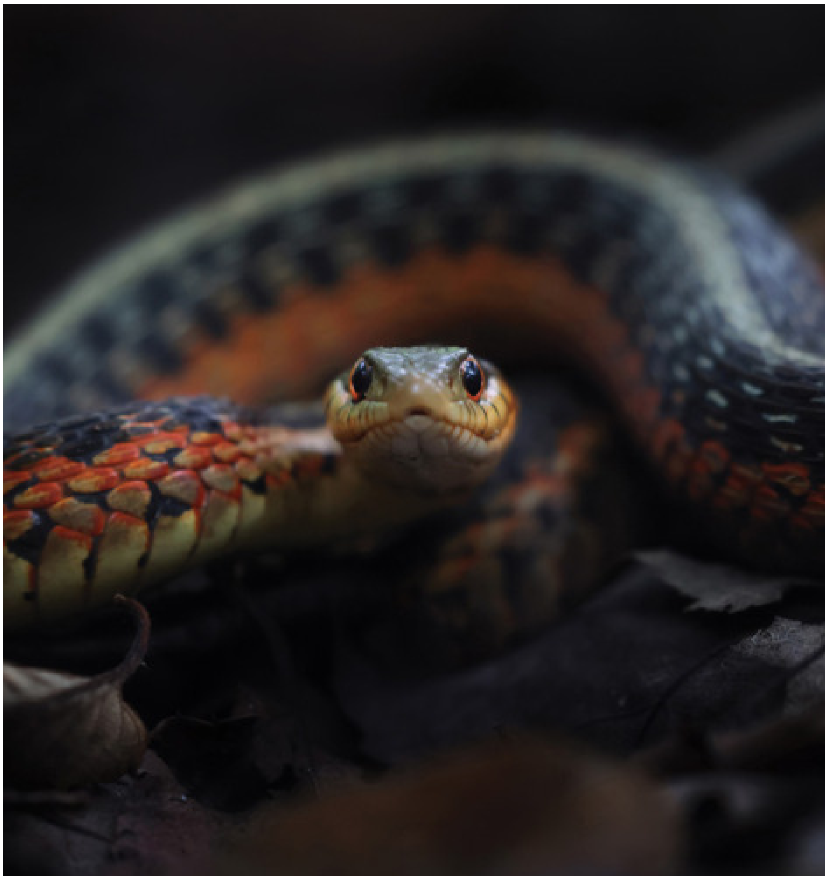


PHOTO BY **LIRON GERTSMAN**
A blood moon, or total lunar eclipse, illuminated the night sky across Canada this past spring. So called for the crimson hue that spreads across the moon as it enters Earth's shadow, the blood moon was the only total lunar eclipse visible in North America this year. The photographer framed the moon alongside roosting crows in Burnaby, B.C., for a unique capture of this otherworldly event.

Join the Canadian Geographic Photo Club at photoclub.cangeo.ca and upload your best shots for a chance to be featured online or in the magazine!

IN A SNAP

Sharing Can Geo via Instagram



@maxime_lv_photography **Maxime Légaré-Vézina**
A garter snake tucked away in a forest, Quebec City

@sheldonhicksphotography **Sheldon Hicks**
Quidi Vidi Village, St. John's, N.L.

@4elementphotos **Shane Kalyn**
Anna's hummingbird, Ladner, B.C.

@alexmayberry16 **Alex Mayberry**
Dutch Valley, near Sussex Corner, N.B.

@simoneheinrichphotography **Simone Heinrich**
Bull elk, Jasper National Park, Alta.

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Gasadalur Village and Mulafossur Waterfall, Faroe Islands

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Left to right: Clare Blackwood, Megan MacKay, Luke Gordon Field and Andrew Ivimey.

DIANA MCCALLUM

Luke Gordon Field

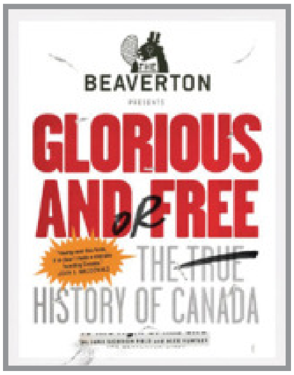
The editor-in-chief of *The Beaverton* reflects on more than a decade of biting Canadian satire

INTERVIEW BY **DAVID MCGUFFIN**

Over the last 15 years, *The Beaverton* has grown from a side project for pizza money to Canada's foremost satirical news source, poking fun at everything from Quebec's language laws ("Parrot removed from Montreal Biodome after learning too much English") to the recent federal election ("Struggling young voters choose between guy who will ignore cost of living and guy who will make every problem worse"). Inspired by satire media like *The Onion, The Beaverton* delivers devastating insight into current events to millions of readers online, through a book and a podcast, and even a TV series that aired on The Comedy Network. Here, editor-in-chief Luke Gordon Field muses on *The Beaverton*'s humble beginnings, its wins and the role of satire in an already absurd news cycle.

On how it all started

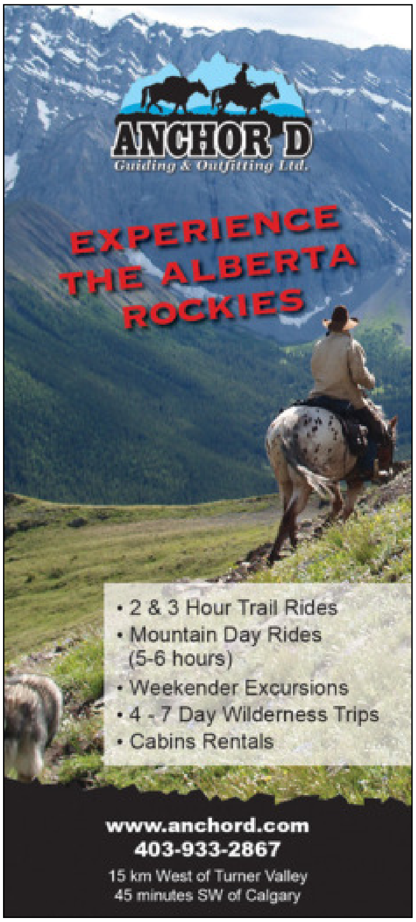
The Beaverton was started in Toronto by the late Laurent Noonan, who was a huge fan of *The Onion* in the States and wanted to bring that kind of comedy here. He wrote, but he didn't have a team of writers. I was in the comedy space, so I joined him almost immediately. We would meet every Sunday at a bar behind Honest Ed's [a former land-



THE BEAVERTON
NORTH AMERICA'S TRUSTED SOURCE OF NEWS
TTC Union and makers of Grand Theft Auto team up to create realistic video game full of delays

Laurent Noonan (right) and Luke Gordon Field in 2012; The book, released in 2017.

mark discount store in downtown Toronto] and pitch headlines just to make each other laugh. When he started, he would walk around Toronto in this ridiculous beaver tuxedo costume and hand out the paper, when we used to have physical copies. For the first five or six years there was no money — we were just doing it for fun, beer and pizza money for the Christmas party. Then, very wonderfully, the show got picked up.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On their first viral headline

We published an article about Chris Hadfield when he returned from space in 2013 ("Hadfield comes home to $1.37 million Rogers phone bill") because he was tweeting and posting videos the entire time. Canadians, for the most part, got it and thought it was funny. Then people around the world were reading it, thinking it was real. We had interview requests from websites we'd never heard of. We heard from Chris's people that, for years afterward, someone would inevitably come up to him and say, "Hey, so sorry about that phone bill."

On the TV show

Our approach for the show [which aired weekly from 2016 to 2019] was to create fictional stories that clearly referenced real news, with a *Beaverton* twist. Our first episode aired the day after the 2016 U.S. election, meaning we didn't know who won when we wrote it. We wrote three different versions. At the time, Hillary Clinton was so far ahead in the polls, we spent days carefully sculpting the "Hillary wins" version. I think we dashed off the Trump version in about two hours; we thought it would be fun to release it online later as an "imagine if" kind of thing. That's still one of the biggest pieces of content we've ever put out. We thought, "this is great for us. Terrible for the world, but great for us."

On good satire in today's world

How do you out-absurd the absurd? It's a daily challenge. Things we think are ridiculous all of a sudden come true. That's not good. I think about how we can outdo the [events happening in] the world in a way that we aren't just pointing at something and saying, "look how bad that is." That's the challenge with political comedy right now. You want to have something to say beyond just, "we all agree this is bad or silly or crazy."

On the funniest place in Canada

I spent a weekend in St. John's. I hope this isn't insulting — everyone was loud and charming. My now wife and I did a road trip out east right after we graduated law school. We were at a bar in Quidi Vidi, and she was having a couple of drinks before flying home later that night. Everyone at the bar kept asking why I wasn't drinking, and I explained that I had to drive her to the airport in an hour. Every single person at the bar was like, "Oh, I'll drive you guys" — so wonderfully living up to the stereotype of "we'll do anything for a stranger." It was so sweet, but also they were so drunk. ⊛

COURTESY OF LUKE GORDON FIELD

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CANADIAN Geographic

Mitakuye Oyasin

HORSES REPEATEDLY MIGRATED between North America and Eurasia across Beringia (an ancient land bridge) between 50,000 and 13,000 years ago, exchanging genes in both directions, according to a study spearheaded by the Lakota Nation-led Global Institute for Traditional Sciences. The international research team, including 18 Indigenous scientists, combined analyses of ancient DNA with Indigenous scientific knowledge systems to determine how climate change affected megaherbivores in the late Pleistocene. Warming eventually caused Beringia to submerge and North American habitats to shift from dry grasslands to boggy tundra, contributing to horses' decline across the continent. The findings underscore the Lakota ecological principle "mitakuye oyasin," which emphasizes that a species' survival depends on its relationship with other life forms within a shared, interdependent habitat.

WHOOP WHOOP!

TWO WHOOPING CRANE CHICKS became the first to be born at the Wilder Institute's Archibald Biodiversity Centre in Calgary in late spring. The parents, longtime pair Tim and Bombadil, will care for one of the chicks while the second is fostered by Gary and Inukshuk, a bonded pair with physical limitations that make natural breeding difficult. "Allowing [Gary and Inukshuk] to raise offspring reinforces their own pair bonds and provides them with an opportunity to contribute to their species' recovery efforts," says Caitlin Slade, animal care manager at the centre.

5 million

THAT'S HOW MANY illegally traded seahorses, worth an estimated $29 million, were seized globally by authorities over a 10-year period, according to research by the University of British Columbia. The researchers found nearly 300 seizures in public records involving 62 different countries but caution this is only the "tip of the iceberg." Many of the seized seahorses originated in Africa, Asia and Latin America, with much of the demand coming from traditional medicine. China and Hong Kong were the most common destinations, but dried seahorses have also been found for sale in Canada — both online and in traditional medicine shops.

Read *Canadian Geographic*'s latest wildlife stories at cangeo.ca/wildlife.

Kelp **untapped**

THE RESULTS of the first national assessment of Canada's kelp are in: the great algae forests may offer an untapped option for natural climate solutions. The University of Victoria scientists leading the study measured kelp occurrence, productivity and coastal current dynamics to build a national kelp forest database and take stock of its carbon storage potential. They found Canada's kelp could capture between 40,000 and 400,000 tonnes of carbon each year, storing it in sea floor sediments — a promising number.

"RESISTANCE"

THIS IS WHAT the Chiefs of Ontario (representing 133 First Nations) promise in response to the passing of Bill 5. The new law allows Doug Ford's government to create "special economic zones" so projects can be exempted from provincial laws, including the Endangered Species Act. Many of the approximately 270 plants and animals listed under the act — including boreal caribou, eastern small-footed bats and Jefferson salamanders — rely on its protections for survival. Bill 5 has replaced the act with weakened legislation that eliminates required recovery strategies for endangered species, allows species to be removed from the provincial species-at-risk list for political or economic reasons and permits developers to destroy protected habitat before review — including consultation with First Nations, as entitled by treaty provisions.

CLOCKWISE FROM LEFT: LUCIANO FASULLO/CAN GEO PHOTO CLUB; VALERIE HORNER/CAN GEO PHOTO CLUB; LASALLE PHOTO/ISTOCK; WILMA MCKENZIE/CAN GEO PHOTO CLUB; WRANGEL/ISTOCK

Madame Web

Inside the Toronto lab where arachnologist Maydianne Andrade studies Canada's most venomous spider

BY **KERRY BANKS**

A MALE BLACK WIDOW SPIDER cautiously approaches a female as she waits at the centre of her tangled web. Her bulbous black body, bearing its distinctive red mark in the shape of an hourglass, is three times larger than his. Shifting side to side, he begins vibrating his abdomen and plucking the strands of her web to convince her he is a potential mate and not a meal. This strange courtship dance can last from 20 minutes to eight hours. If she responds positively, the male will wrap her forelegs in his silk in a form of spider bondage, then mount her body and insert a claw-like appendage called a pedipalp into her genital opening and deposit his sperm. If not: dinner.

The unfolding scene is being closely watched on a monitor by a trio of students at the University of Toronto Scarborough. They are enrolled in a course on evolutionary biology taught by arachnologist Maydianne Andrade, whose five-room, two-storey lab houses the world's largest captive population of black widow spiders. The lab has as many as five or six species of the world's 35 black widow species on site at one time, including the two found in Canada, and a total of nearly 100,000 spiders.

Through experiments conducted both in the lab and in the field, students learn how sexual selection, social behaviour and ecological conditions

PREVIOUS PAGE: Arachnologist Maydianne Andrade has dedicated her career to studying the black widow spider. **THIS PAGE:** Andrade's University of Toronto lab (TOP) houses nearly 100,000 black widow spiders, offering undergrads (BOTTOM) like Afnan Said, left, and Maren Tan, middle, a chance to study them.

MAX POWER

affect the mating strategies and morphology of the spiders. They then discover whether the spiders are still able to reproduce successfully when environmental or population conditions change. The lessons learned, says Andrade, may help us understand the global biodiversity crisis and point to conservation strategies.

"Spiders are the top terrestrial predators of insects, so understanding how they can thrive in the environment helps us learn more about the food web that we all depend on," she says. "The more we know about how species can or can't maintain their health and reproduction, even when environments are changing rapidly, will help us apply those general ideas across different species."

Considering that the black widow produces a neurotoxin 15 times more toxic than that of a rattlesnake, it's not surprising that the lab created waves when it opened in 2000. "Many people were terrified," admits Andrade. However, she says the concerns were unjustified: the bite of these shy and retiring spiders is rarely fatal for a healthy adult (though it can cause a range of nasty symptoms requiring prompt medical attention).

Even so, the lab must conform to strict safety protocols that include two sets of locked doors and twice-weekly vacuuming. Entry is restricted to those who are trained in biosecurity protocols, and students must ensure no skin is exposed when handling the spiders. Experiments take place under the glow of special red lights, as the spiders are most active at night, and mating activity is filmed from above and watched on monitors in another room.

Andrade chose to study black widow spiders because they display extreme behaviours that confound our expectations. She focused her PhD on the most cannibalistic of the black widows, the Australian redback. After penetrating the female during mating, the male will perform a somersault and position his body directly above her fangs. The sex continues as she eats him alive.

Other scientists had proposed that the males sacrificed themselves to literally feed their future offspring, but Andrade proved their behaviour is really an act of self-interest, allowing a male to copulate for longer, thus boosting the chances that his genes are passed on in the competition that takes place inside the female if she mates with other males. The discovery made headlines and catapulted Andrade to academic fame.

During her time at U of T, Andrade's influence has spread far beyond the arachnid realm. Notably, the Jamaican born scientist has spearheaded several initiatives aimed at tearing down barriers for other Black scientists.

Today, the fear of Andrade's lab has largely subsided, and many undergrads appear to take a vicarious pride in the fact that venomous spiders are studied on campus. But she still encounters people who question not only why spiders should be studied but even why they should exist. Andrade points to the role they play in controlling the insect population. As well, the black widow's silk is so strong and flexible that researchers are trying to create a synthetic prototype for potential architectural and biomedical applications.

As for Andrade, even after more than three decades of research on black widows, she still finds them fascinating. "They keep revealing new things about their behaviour or their ecology that's puzzling," she says. "They're constantly surprising me."

Area 514

The night an iconic Montreal hotel became the centre of an unexplained UFO sighting

BY **JOHN BATT**

ON NOVEMBER 7, 1990, an American tourist was doing the backstroke in the rooftop pool at the Hotel Bonaventure in downtown Montreal when she looked up at the sky and saw something she was certain was not from this world.

Perhaps her mind was bent by the hotel itself, its melding of exterior concrete brutalism and interior luxury making it a modernist wonder very much in step with the architectural daring of the 1960s. Measuring 288,000 square metres when it opened in 1967 (just in time for Expo 67), Hotel Bonaventure was, for a period, the world's largest building.

Or perhaps the tourist was lulled into a half-awake state by the hotel's incredible heated rooftop pool? Available for use all year, it has one of those wonderful features where a guest can descend into the pool from inside the hotel and, after swimming through a little tunnel to reach the outdoors, float serenely with an unobstructed view of Montreal's night sky. The perfect place, really, to spot a UFO.

Around 7 p.m. on that fateful November night, the American tourist did just that — and she wasn't alone. Gliding towards the hotel, the object was initially described by witnesses as a cluster of green, amber and yellow lights, emanating from an incomprehensibly massive round metallic object. The UFO stopped and hovered above the hotel for nearly three hours.

The lifeguard at the pool called hotel security. Other guests ran to the rooftop for a glimpse. Nobody could believe their eyes. The police soon arrived. First on the scene was François Lippé, who immediately phoned his boss, neighbourhood post commander Robert Masson.

Masson immediately ordered that all spotlights across downtown be turned off lest they be creating some kind of optical phenomenon. Still, the giant hovering UFO remained. Masson confirmed that neither the airport or closest military radar outpost had anything on radar. Before long, the RCMP, military and NASA had joined the investigation.

It was later noted that a cargo plane visible on radar had passed between the roof of the hotel and the UFO above at an altitude of 1,800 metres. Masson estimated the UFO was between 2,500 and 3,000 metres above the ground. Judging by the size of the cargo plane compared to the UFO, he guessed that would make the mysterious object about the size of five full football fields.

By 9 p.m., the press had caught wind of the goings-on at the hotel. The UFO was still there, with *La Presse* reporters Jules Béliveau and Marcel Laroche witnessing it first hand, their story and photos landing in print the next morning. In an interview with the CBC, Béliveau later described taking the elevator up to the hotel rooftop with a police officer, who joked about whether he should use his gun. "But when we arrived together on the roof, he looked into the sky and said '*sacrament*.' He was astonished like I was." Finally, around 10 p.m., the clouds had become thick enough to obscure the object. It was never seen again.

What makes the sighting so special, says Christopher Marilley, director of sales and marketing at Hotel Bonaventure, is the credibility of the witnesses involved. "When you have the police on site and later going on record regarding the sighting, it brings a different level of legitimacy to the whole situation," says Marilley. "Perhaps we should have a plaque or something."

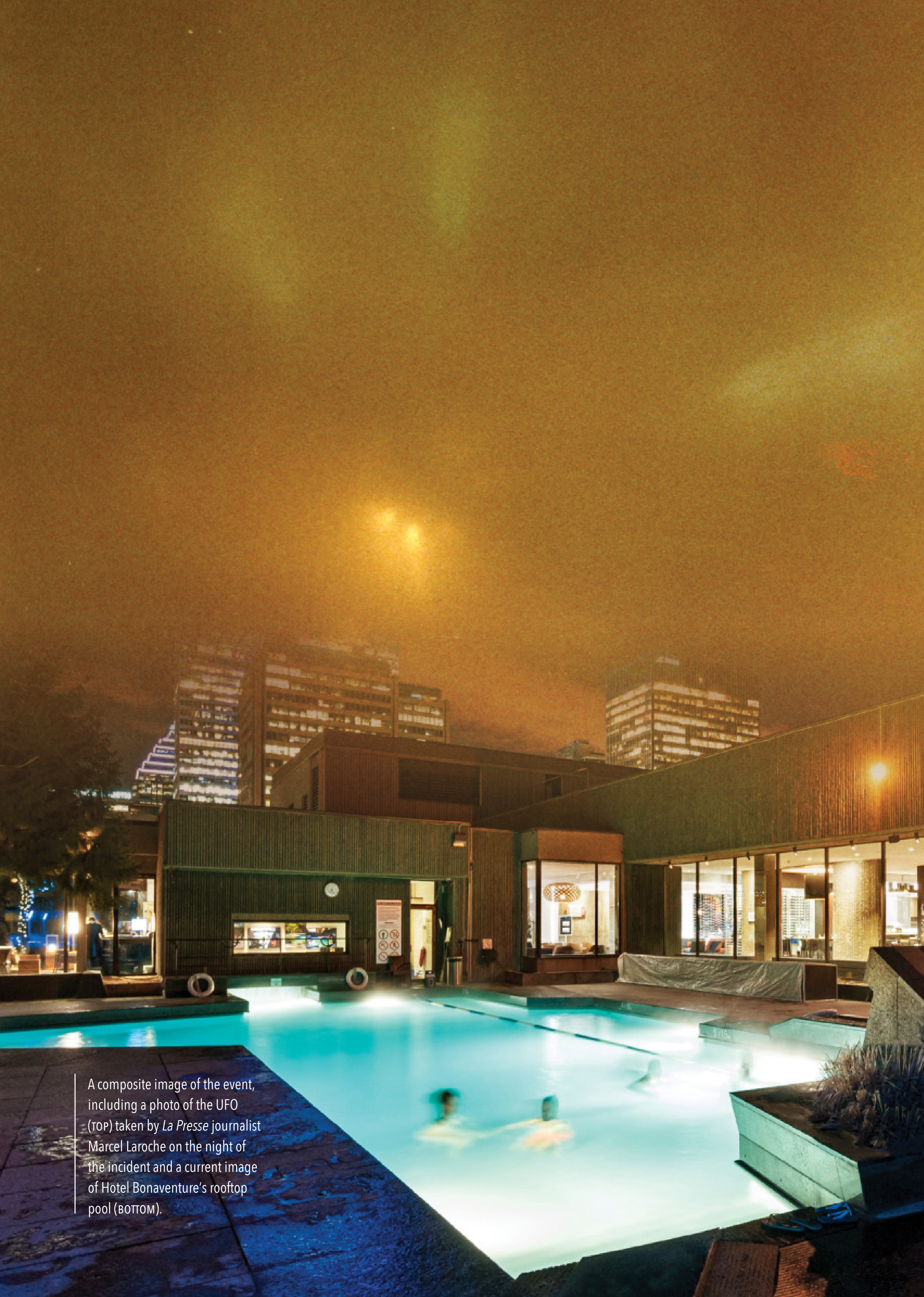
Official files related to the case were classified less than 24 hours after the sighting. Masson believes he was lied to by the military. "I am convinced that I saw something that was not made by any inhabitants of this planet," he said in 2005. "There is no doubt in my mind it came from somewhere else other than Earth."

In 1992, a 25-page report called "Details Surrounding a Large Stationary Object Above Montreal" was prepared by Bernard Guénette, a UFO researcher, and Richard F. Haines, a former scientist with NASA. The report suggested some sort of huge physical object, about 540 metres wide, was responsible for the beams of light. It concluded the "evidence for the existence of a highly unusual, hovering, silent large object is indisputable."

The incident is considered an important UFO sighting in Canadian history. It remains unexplained, the subject of continued debate in UFO circles and even a commemorative coin issued by the Royal Canadian Mint — something to remember the next time you find yourself in the rooftop pool at Hotel Bonaventure in Montreal. Don't be afraid to look up!

John Batt is the administrator behind the popular Canadian history and culture Instagram account @canada.gov.ca

MARCEL LAROCHE/LA PRESSE; HOTEL BONAVENTURE



A composite image of the event, including a photo of the UFO (TOP) taken by *La Presse* journalist Marcel Laroche on the night of the incident and a current image of Hotel Bonaventure's rooftop pool (BOTTOM).

Inuktuusuunguvit? (Do you speak Inuktut?)

Ottawa is home to a booming Inuit community reclaiming their language and culture

BY **KATHERINE TAKPANNIE**

"KINAUVIT" in Inuktut means "What's your name?"

"Katherine-ngu-junga," or "I am Katherine; my name is Katherine" in English. My last name, Takpannie, means "up there." My grandfather, Tommy Takpanie Sr., used to say, "We're from up there" (meaning the Arctic). My anaana (mother) was born in Apex Hill, Nunavut, but I consider myself an urban Inuk. I'm from Ottawa, or "Aatuvaa-miu-tau-junga."

Whether we're in the Arctic or the bustling city of Ottawa, Inuit are connected through Inuktut. The language is spoken from the western Arctic in Alaska to the furthest eastern Arctic of Kalaallit Nunaat (Greenland) and all throughout the Canadian Arctic. Where my anaana is from, they speak what is known as the South Qikiqtaaluk dialect.

A growing number of Inuit describe themselves as "urban." Ottawa is home to more than 3,000 Inuit, people like my anaana who moved from Nunavut to access the various programs and services for Inuit ranging from Akausivik (a place to get well) to Tungasuvvingat Inuit (for social, cultural, employment and education support) and Nunavut Sivuniksavut (our youth, our future), a unique college program in the heart of downtown Ottawa.

Nunavut Sivuniksavut pairs accredited college and university courses on the Nunavut Agreement and its implementation alongside a revitalization of Inuit culture and language by connecting with Inuit Elders and knowledge keepers from across the Arctic. The program teaches beginner, intermediate and advanced Inuktut courses with the help of Tusaalanga (let me hear!), a website with thousands of Inuktut sound files. I am a proud

OPPOSITE, clockwise from TOP LEFT: Three generations celebrate International Inuit Day at Annie Pootoogook Park: (clockwise from left) Sheena Akoomalik, Alasua Akoomalik, Sarahme Akoomalik and Jacob Amagoalik; baby Katherine and her anaana, Kunnuk Takpannie, in Kitchener, Ont.; Katherine's irniq, William Pauloosie Randall, in Apex Hill, Nunavut. **THIS PAGE:** Katherine performing with Nunavut Sivuniksavut classmates at Winterlude in Ottawa; Kunnuk Takpannie with her grandson Pauloosie in Apex Hill.

KATHERINE TAKPANNIE. OPPOSITE RIGHT AND THIS PAGE LEFT: COURTESY OF KATHERINE TAKPANNIE

alumnus of the program thanks to my nuka (younger sibling of the same sex).

"After I took both years of the program, I knew based off of the way we were raised that you also needed to take it. There were so many things that I learned personally that made me grow that I knew you'd also learn. I knew it would benefit you positively in your personal life and your career," my sister, Tamara Tikisa Takpannie, told me. It took her two years of convincing to get me to enrol. But she was right when she said, "it will change your life!" It did. It was here where I began to understand the deep link between language revitalization and healing from the loss of culture that many Inuit face because of the residential school system our parents and grandparents were forced to attend.

My anaana was the first in her family to attend a residential school as a child. My grandparents grew up on the land, travelling by dog sled and hunting for their meals. My anaana was ashamed to teach me Inuktut after being physically harmed at school whenever she spoke her language. Her trauma is a large reason I didn't know my language growing up. As an urban Inuk, I didn't have the privilege to be raised how I wanted. It was only when I had autonomy and enough safety, education and resources that I was able to begin my journey reconnecting with what was taken from me. I was one of hundreds of thousands of Indigenous children who were the by-product of cultural genocide.

As I have begun
RECLAIMING MY LANGUAGE,
I am passing what I know
DOWN TO MY CHILDREN.

But today, my irniq (son), now the same age as my anaana was when she was put into residential school, tells my anaana proudly, "aakuluk" (I love you). His first word was "amaama" (to breastfeed). As I have begun reclaiming my language, I am passing what I know down to my children. When my anaana received her residential school settlement, she brought her family — her children, our spouses and her grandchildren — back home to the places where she grew up. She wanted to show us the areas she would berry pick. The places she dug for clams and went fishing. Where her father and brothers used to hunt. The hills she ran around with her family and friends as a young child. She showed us where she came from: how beautiful it was and how proud she was to be from the North. I felt immense pride and love for her like never before. I felt more connected to her and more understanding of what she's taught me about our culture, our language and what I will pass down to the next generation. ❄

Discovery Language is supported by the Office of the Commissioner of Indigenous Languages.

Thirsty work

AI is powered by physical hardware in giant data centres — and those data centres need water

BY **ABI HAYWARD**
WITH ILLUSTRATION BY **MARTIN KRZYWINSKI**

Your query has a cost. Aside from the myriad ethical and social dilemmas that have sprung up since generative artificial intelligence hit the mainstream almost three years ago, there's a hidden cost to asking ChatGPT to write you an email: the water we drink. It's no small amount either; the average 100-megawatt data centre, where AI workloads happen, slurps up about two million litres of water each day.

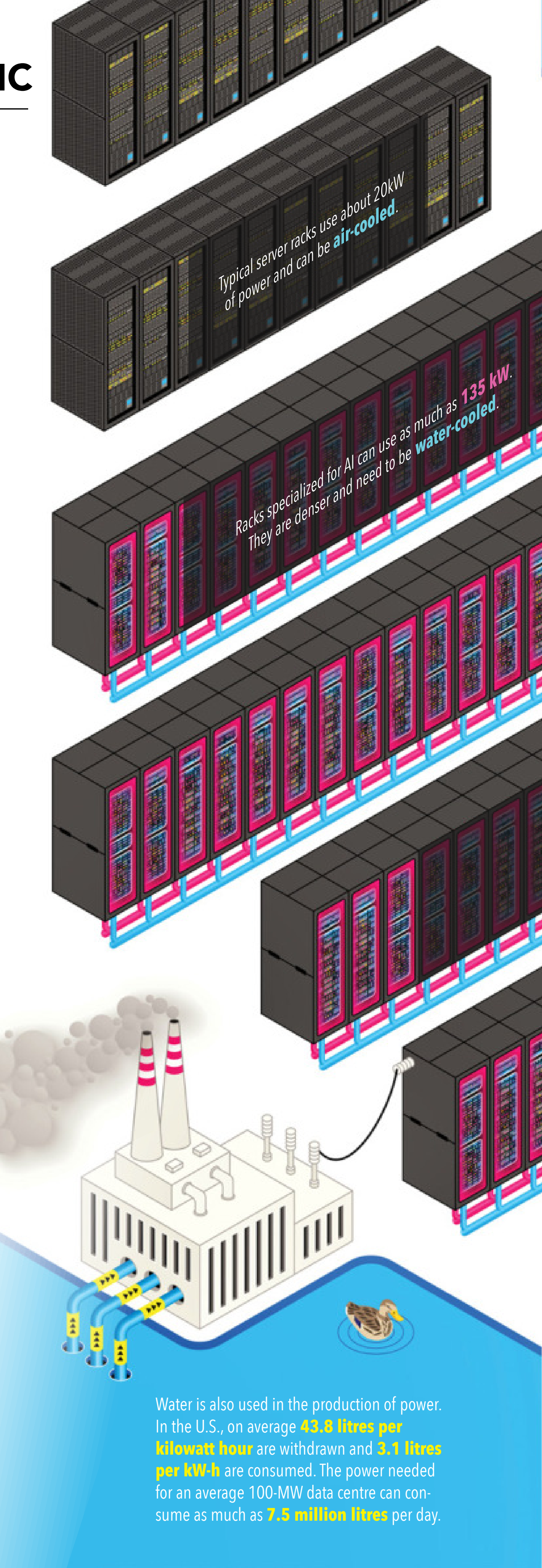
"When we run AI servers, they burn a lot of energy, and this energy turns into heat. So, to get rid of the heat, we have to use a massive cooling system," says Shaolei Ren, an associate professor at the University of California, Riverside, who researches AI. The heat needs to be moved from the servers to the building and then outside. "Many data centres are using open-loop cooling towers that are just evaporating water 24/7," says Ren. Water is also used indirectly through electricity generation to power the servers.

Ren and his team calculated that for 10 to 50 medium-length responses, GPT-3 needs to "drink" 500 millilitres of water. This depends on the data centre — there's a trade-off between water and electricity efficiency. Geography also matters. Hotter climates require more direct water consumption, making Canada an attractive place to put data centres. Electricity is also cheap here and often renewable, especially in British Columbia and Quebec.

Canada now has 239 data centres — a number set to grow, largely because of AI. Bell plans to build six AI data centres in British Columbia, Alberta is jostling to be "North America's destination of choice for AI-enabled data centre investment," and the federal government is investing $2 billion in computing infrastructure over the next five years.

And yet, a *Bloomberg* investigation in May 2025 found most data centres are in areas that are already water stressed. Between 80 and 90 per cent of water consumed by data centres is potable. "They don't *have* to use drinking water, but usually most of the cooling systems require clean water," says Ren.

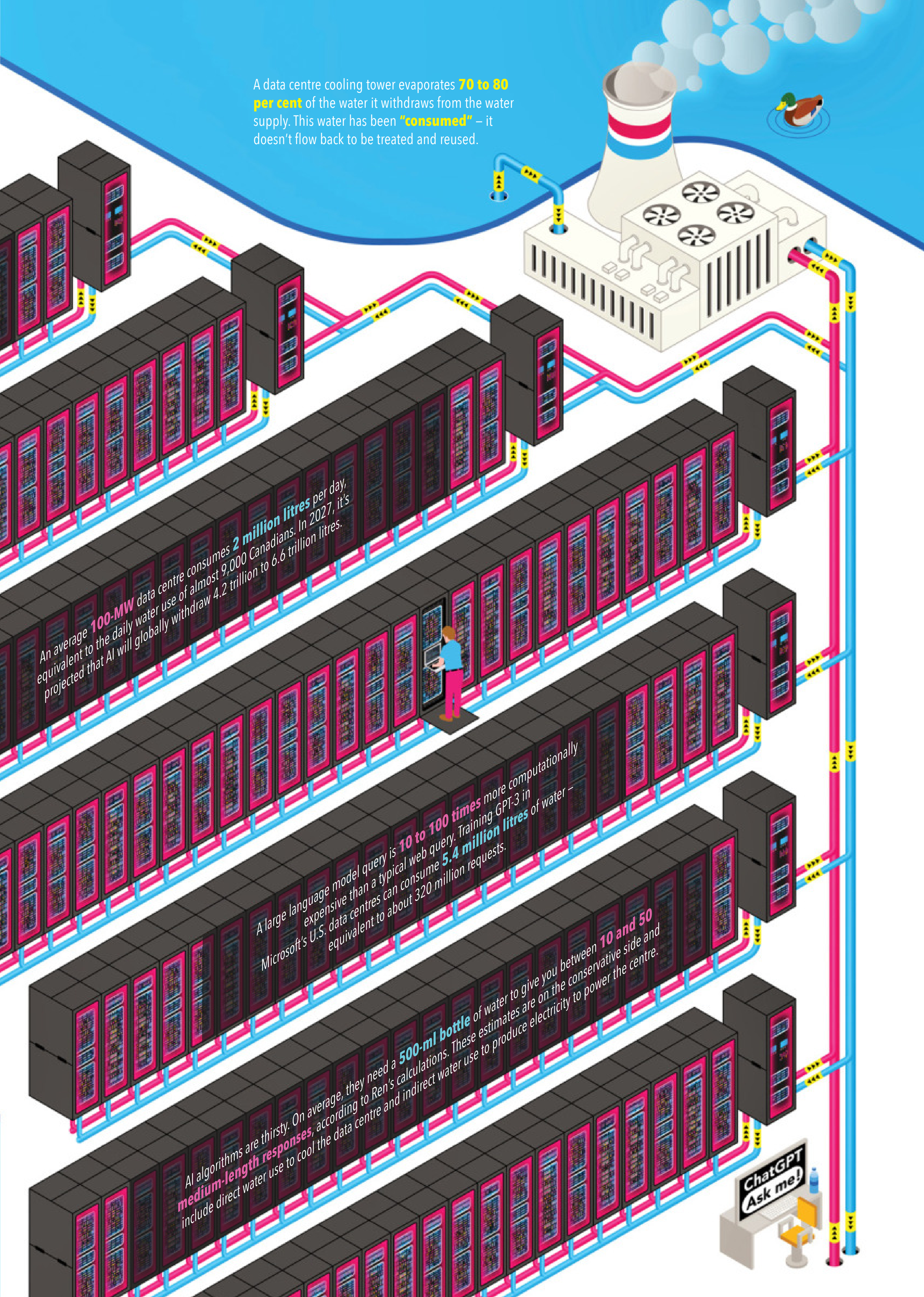
With climate change already altering the global water cycle, Ren is hoping for more transparency and accountability from the AI industry on its environmental toll. "But at the same time, it's not something we should panic about," he says. "We should evaluate the benefit versus the cost. And environmental cost is just part of the cost."



Typical server racks use about 20kW of power and can be ***air-cooled***.

Racks specialized for AI can use as much as **135 kW**. They are denser and need to be ***water-cooled***.

Water is also used in the production of power. In the U.S., on average **43.8 litres per kilowatt hour** are withdrawn and **3.1 litres per kW-h** are consumed. The power needed for an average 100-MW data centre can consume as much as **7.5 million litres** per day.



A data centre cooling tower evaporates **70 to 80 per cent** of the water it withdraws from the water supply. This water has been **"consumed"** – it doesn't flow back to be treated and reused.

An average **100-MW** data centre consumes **2 million litres** per day, equivalent to the daily water use of almost 9,000 Canadians. In 2027, it's projected that AI will globally withdraw 4.2 trillion to 6.6 trillion litres.

A large language model query is **10 to 100 times** more computationally expensive than a typical web query. Training GPT-3 in Microsoft's U.S. data centres can consume **5.4 million litres** of water – equivalent to about 320 million requests.

AI algorithms are thirsty. On average, they need a **500-ml bottle** of water to give you between **10 and 50 medium-length responses**, according to Ren's calculations. These estimates are on the conservative side and include direct water use to cool the data centre and indirect water use to produce electricity to power the centre.

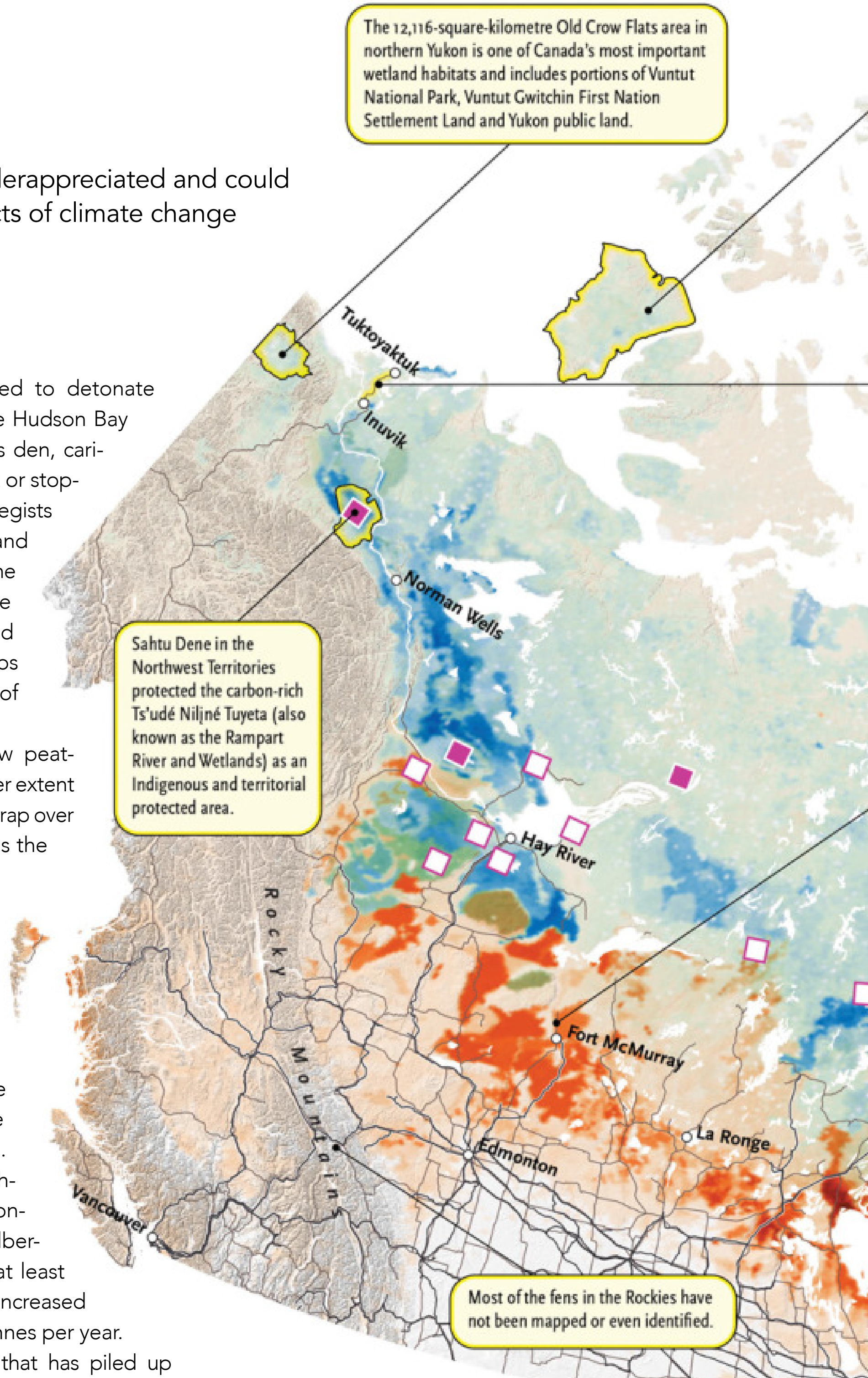
ON THE MAP

Exploring Cartography

For peat's sake

Canada's peatlands are vast, underappreciated and could be a vanguard against the impacts of climate change

MAP BY **CHRIS BRACKLEY**
WITH TEXT BY **EDWARD STRUZIK**



The 12,116-square-kilometre Old Crow Flats area in northern Yukon is one of Canada's most important wetland habitats and includes portions of Vuntut National Park, Vuntut Gwitchin First Nation Settlement Land and Yukon public land.

Sahtu Dene in the Northwest Territories protected the carbon-rich Ts'udé Nilįné Tuyeta (also known as the Rampart River and Wetlands) as an Indigenous and territorial protected area.

Most of the fens in the Rockies have not been mapped or even identified.

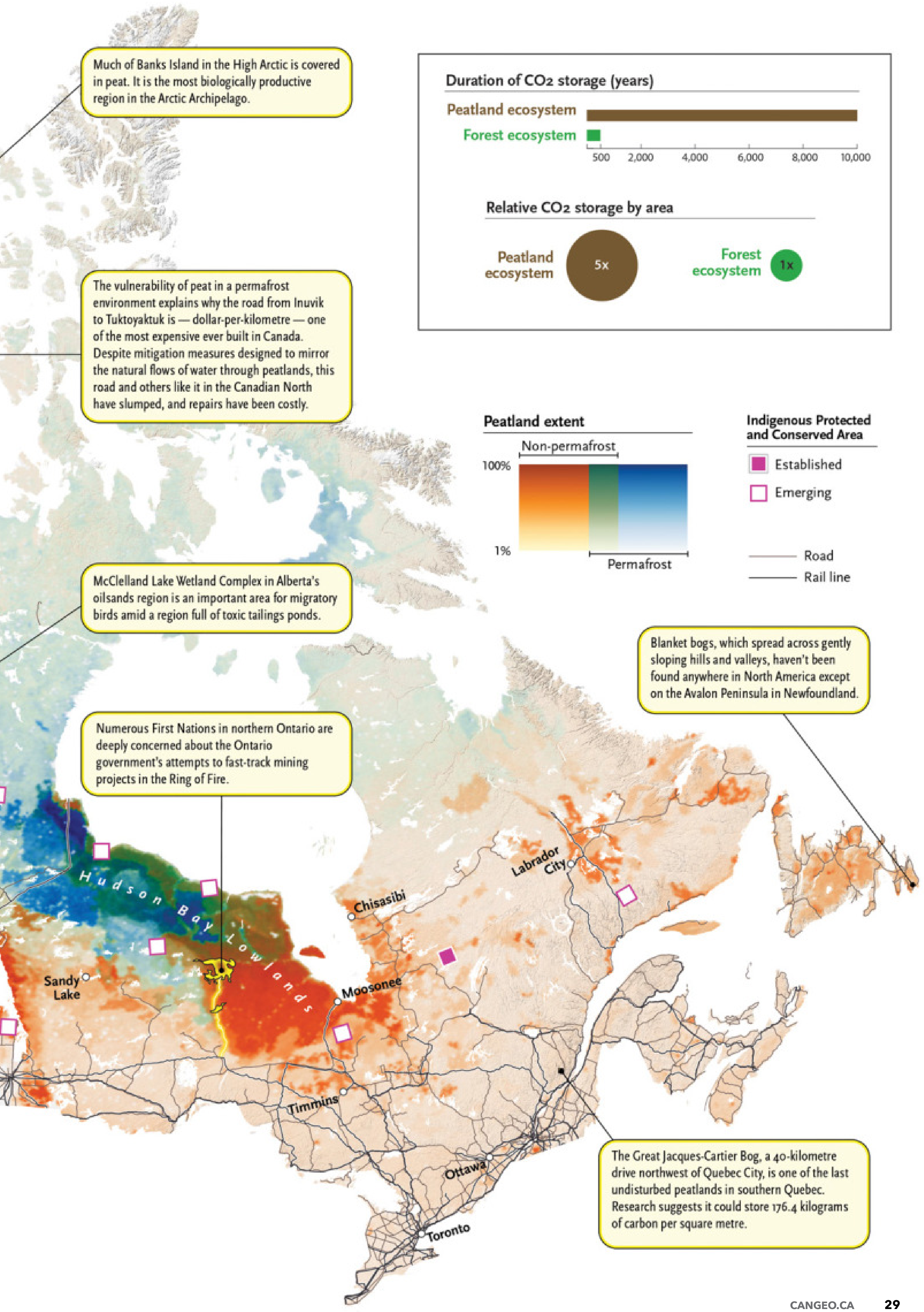
In 1949, a top-secret plan was hatched to detonate 12 Hiroshima-sized atomic bombs in the Hudson Bay Lowlands, a peatland where polar bears den, caribou overwinter and millions of birds nest or stopover. Canadian and British military strategists considered the region to be "a waste land suitable only for hunting and trapping." The plan was never carried out only because the British decided northern Canada would be too cold for their scientists. (The bombs were dropped on islands off the coast of Australia with devastating effects.)

This anecdote is emblematic of how peatlands such as bogs and fens, and to a lesser extent swamps and marshes, have suffered a bad rap over the centuries. They were often viewed as the haunts of will-o'-the-wisps, jack-o'-lanterns and moss people, as well as the source of diseases such as cholera and swamp fever. Many of them were drained for those reasons. Peat — from places such as Alfred Bog outside Ottawa, Burns Bog near Vancouver and Holland Marsh near Toronto — was mined to produce cheap fuel to heat homes, manufacture firebombs and make way for agriculture. Peat continues to be harvested throughout the country to produce soil conditioners. Seismic exploration conducted for Alberta's oil and gas industry has disturbed at least 1,900 square kilometres of peatland and increased methane emissions by 4,400 to 5,100 tonnes per year.

Peat is partially decayed vegetation that has piled up over centuries in water-logged, oxygen-starved conditions. Peatlands, often referred to as muskeg in Canada, account for 90 per cent of Canada's wetlands and cover about 113.6 million hectares. While peatlands make up just three to four per cent of the Earth's landscape, they pack a big punch, especially in Canada, which is home to a quarter of the world's peatlands. The Hudson Bay and James Bay lowlands store five times more carbon than the equivalent area in the Amazon rainforest. A healthy peatland can stop or slow a wildfire. And peatlands can mitigate flooding because mosses can hold up to 25 per cent of their weight in moisture.

The degradation of peat continues as permafrost thaws and wildfires burn bigger and more often. And yet there is a glimmer of hope in that Indigenous Peoples and scientists are working to safeguard, restore and reframe Canada's expansive peatlands as a landscape worth saving. ❁

DATA CREDITS: PEAT EXTENT DATA: "MAPS OF NORTHERN PEATLAND EXTENT, DEPTH, CARBON STORAGE AND NITROGEN STORAGE (2021)." DATASET VERSION 2, 2020. BOLIN CENTRE DATABASE. HTTPS://DOI.ORG/10.17043/HUGELIUS-2020-2.
CO2 STORAGE STATISTICS AND IPCAS: "NORTHERN PEATLANDS IN CANADA: AN ENORMOUS CARBON STOREHOUSE, WILDLIFE CONSERVATION SOCIETY CANADA." STORYMAPS.ARCGIS.COM/STORIES/19D24F59487B46F6A011DBA140EDDBE7


Duration of CO2 storage (years)
Peatland ecosystem
Forest ecosystem
500
2,000
4,000
6,000
8,000
10,000
Relative CO2 storage by area
Peatland ecosystem
5x
Forest ecosystem
1x
Peatland extent
Non-permafrost
100%
1%
Permafrost
Indigenous Protected and Conserved Area
Established
Emerging
Road
Rail line
Hudson Bay Lowlands
Sandy Lake
Chisasibi
Labrador City
Moosonee
Timmins
Ottawa
Toronto

Much of Banks Island in the High Arctic is covered in peat. It is the most biologically productive region in the Arctic Archipelago.

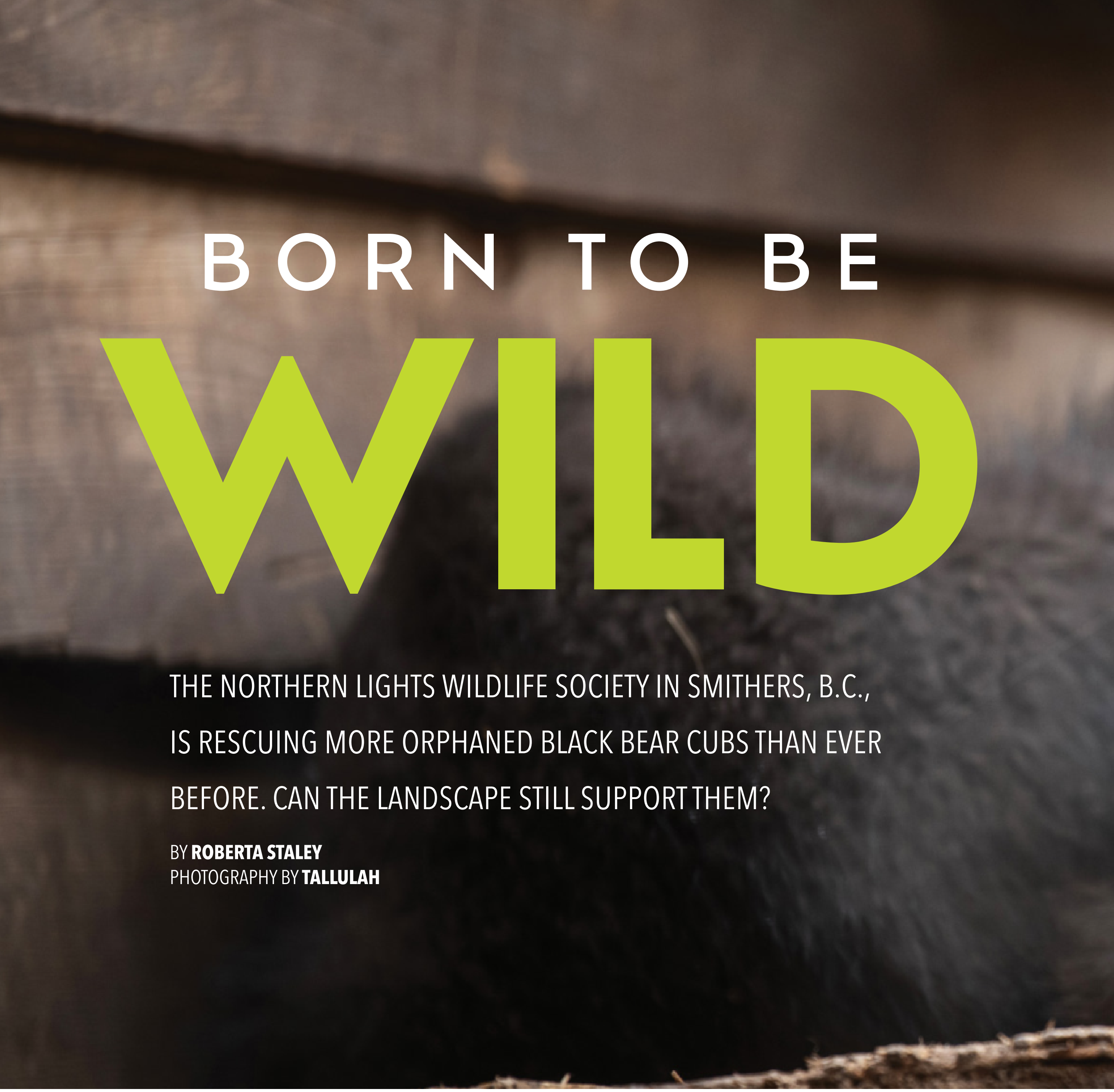
The vulnerability of peat in a permafrost environment explains why the road from Inuvik to Tuktoyaktuk is — dollar-per-kilometre — one of the most expensive ever built in Canada. Despite mitigation measures designed to mirror the natural flows of water through peatlands, this road and others like it in the Canadian North have slumped, and repairs have been costly.

McClelland Lake Wetland Complex in Alberta's oilsands region is an important area for migratory birds amid a region full of toxic tailings ponds.

Numerous First Nations in northern Ontario are deeply concerned about the Ontario government's attempts to fast-track mining projects in the Ring of Fire.

Blanket bogs, which spread across gently sloping hills and valleys, haven't been found anywhere in North America except on the Avalon Peninsula in Newfoundland.

The Great Jacques-Cartier Bog, a 40-kilometre drive northwest of Quebec City, is one of the last undisturbed peatlands in southern Quebec. Research suggests it could store 176.4 kilograms of carbon per square metre.



BORN TO BE WILD

THE NORTHERN LIGHTS WILDLIFE SOCIETY IN SMITHERS, B.C., IS RESCUING MORE ORPHANED BLACK BEAR CUBS THAN EVER BEFORE. CAN THE LANDSCAPE STILL SUPPORT THEM?

BY **ROBERTA STALEY**
PHOTOGRAPHY BY **TALLULAH**

IN 2018, the François Lake wildfire swept through a swathe of British Columbia's interior, leaving behind a vast cemetery of grey-white trees. A ghostly forest, but not a forest of ghosts. Watched over by these eerie sentinels, the landscape, now humming with butterflies and bees, is carpeted by tiny white flowers that will soon erupt into wild strawberries. Fireweed, raspberries, dandelions and rose bushes — fertilized by ash and nurtured by sun no longer impeded by shadowy trees — also burst forth from the earth. All perfect bear food.

In the distance, a solitary moose, another sign of the landscape returning, stands close to a small, round lake. "They'll have a good time scaring the ducks," Angelika Langen of Northern Lights Wildlife Society in Smithers, B.C., says with a broad smile.

"They" being four yearling black bear cubs — two wearing GPS collars — just released from their metal crates after travelling three dusty, bumpy hours on the back of a truck. This haven is ideal for the youngsters not only because of its verdant cornucopia but also thanks to a lack of competition from other bruins. Driven out by the wildfire, many animals have yet to return here, Langen says.

When the crate doors open, three of the yearlings — Rose, Madame Min and Figaro — bolt as if ejected from a cannon. Rose scurries up a nearby tree then descends quickly, annoyed that the slender young pine isn't high

enough to provide a sense of security. Burly Kocoum, who managed to slip out of his GPS collar during the ride, takes his time ambling out of the crate, sniffing the air curiously before vanishing into the undergrowth. “It’s amazing how they just disappear into the wild,” says Langen.

For her, releasing rehabilitated yearling black bear cubs each spring never loses its thrill.

Langen and her husband, Peter, have been rescuing, rehabilitating and rewilding black bear cubs in British Columbia since 1990 and grizzly bear cubs since 2007 from their roughly 90-hectare spread. Run by a large contingent of volunteers and grad students as well as a handful of staff, the centre provides a fresh, highly varied diet to orphaned cubs, ensuring the bears are vigorous, fat and sassy upon release. The bears stay for up to 18 months in 10 expansive enclosures that include winter dens made of lumber, straw and branches, with natural enrichments such as logs and pools. To ensure the animals don’t become habituated to humans, only a few people feed them.

Rose, Madame Min, Figaro and Kocoum are just four of 124 cubs released back into the wild last spring — a big jump from 75 the previous year. Drought and marauding wildfires meant the centre rescued a record number of starving and orphaned cubs in the fall and early winter of 2023 to rehab for a 2024 release.

The burgeoning number of bear cubs coming into Northern Lights' care is worrisome and brings into question whether an increasingly climate change-scarred landscape can adequately support the young bruins in their new incarnation. In the wild, cubs aged 16 to 18 months already face a mortality rate of about 50 per cent. Will Rose, Madame Min, Figaro, Kocoum and the others have the same chance of survival? Or do their grim beginnings foreshadow a less successful life?

ACROSS BRITISH COLUMBIA, climate change-linked drought, biblical infestations of grasshoppers, evaporated streams, tinder-dry forests that explode into infernos and intense heat have roiled the landscape, especially in the past decade. In 2021, the village of Lytton reached a Canadian record high of 49.6 C, before being incinerated by wildfire. Last year, more than one million hectares burned, making 2024 B.C.'s fourth worst year on record for wildfires. The heat and drought have taken an enormous toll on wildlife, with many species, including bears, unable to find the forage they need to survive.

Hungry bears oftentimes follow their noses into towns and cities, particularly in autumn when their appetites turn voracious in preparation for winter hibernation. In 2023, drought and wildfire led to a disastrous wild berry crop, a primary summer food source supplementing usually fish, nuts and roadkill. Mother bears, brazen in their famished desperation, descended into populated mountain valleys to gorge on fruit trees and garbage. Suddenly they became nuisance bears, shot by locals or conservation officers and leaving behind terrified cubs too young to care for themselves. (That year, the province's conservation officers killed 603 black bears, the second highest number on record in a decade.) Hungry mother bears also perished after colliding with vehicles while trying to navigate busy roads and highways in their quest for food.

Do the cubs' grim **BEGINNINGS** foreshadow a less **SUCCESSFUL LIFE**?

The cubs were as affected as their mothers, as they normally chow down alongside mom when they're not nursing, devouring berries, roots and salmon in an effort to reach about 23 kilograms — enough to sustain them through a long winter snooze. When Langen and Northern Lights volunteers were contacted by wildlife officers, citizens or municipalities to rescue cubs across the province that fall and winter, two orphans weighed only six kilograms — the size of a large

Roberta Staley (@robertastaley) is a journalist, documentary filmmaker and author based in Vancouver. Tallulah (@tallulah_photo) is a photojournalist also based in Vancouver.

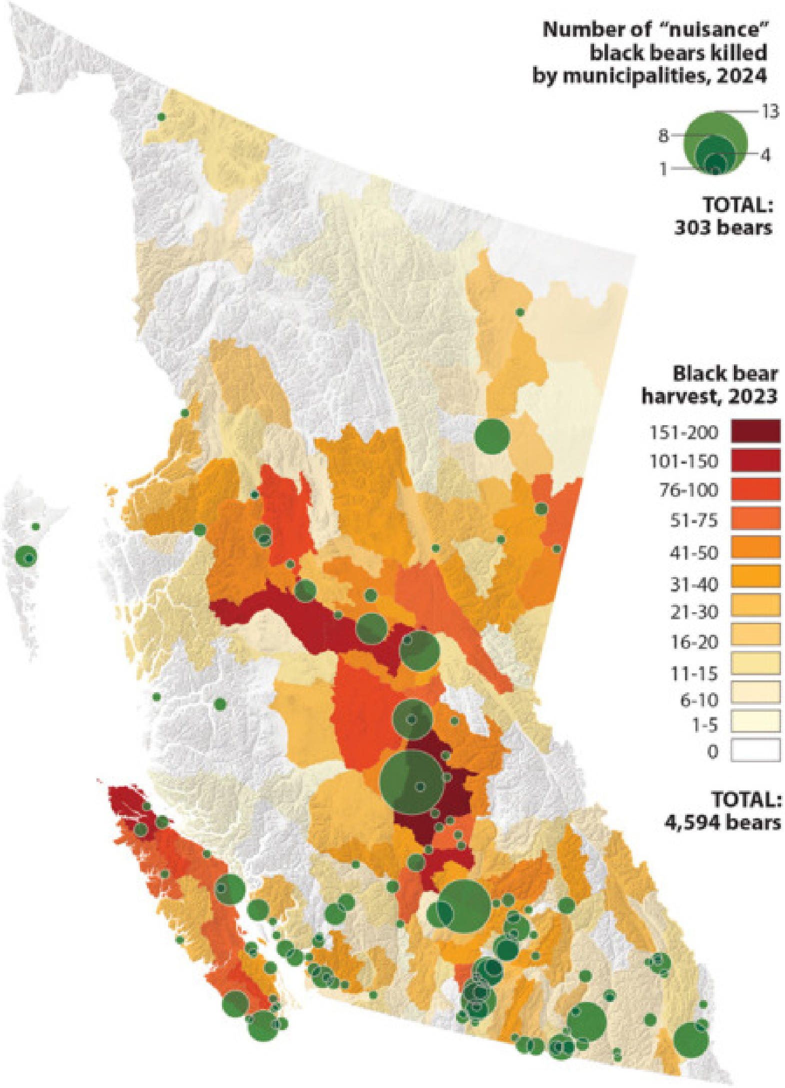
An orphaned black bear cub (PREVIOUS SPREAD) being rehabilitated at Northern Lights in Smithers, B.C., at the base of Hudson Bay Mountain (THIS PAGE). A collared yearling (LEFT) is released into the wild.

housecat. The average weight was a meagre 15 kilograms, Langen says.

The following spring, after the malnourished cubs had been brought back to health, Langen began collaring them to find out how they fare after release. Through a collaboration with the provincial government and Emma Bialobzyski, a University of Victoria graduate student in the department of geography, 42 of the 124 cubs were fitted with state-of-the-art, lightweight GPS tracking collars.

Costing $70,000, the collars are giving Langen and Bialobzyski a better understanding of the bears' territorial needs and survival rates — helping the team at Northern Lights better prepare new bruins to thrive in the wild. Some of the critical information gleaned will include where and how far the bears travel, how large a home range they require and whether they end up close to human habitation. The collars are designed to fall off after 64 weeks, and so data collection finishes between September and October.

Veterinarian Helen Schwantje helped Northern Lights collar last year's black bear yearlings. The bruins were sedated with a quick jab of anesthetic to the hindquarters, using a syringe and needle attached to a long pole. As soon as the bears went under, they were placed on a handling blanket and weighed. Schwantje checked the bears' mucous membranes, took their temperature, recorded their heart rate, withdrew blood and plucked hair for genetic evaluation. Northern Lights staff then took nose-to-tail, girth and neck measurements. "We



MAP: CHRIS BRACKLEY/CAN GEO. DATA CREDITS: CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE – BRITISH COLUMBIA. BEAR HUNTING NUMBERS: HUNTER SAMPLE SURVEY ESTIMATES 1976 TO 2023, MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS, 2025. PREDATOR STATISTICS: BLACK BEAR. WWW2.GOV.BC.CA

do the measurements to assess if they grow at the same rate as a normal healthy bear, to determine if it's worthwhile to rewild," Schwantje says.

Once the collars were on, they were checked for proper sizing: there should be room to comfortably put two fingers under the leather with some give. This way, it won't slip over the bear's jaw while also allowing enough room for growth. Wild animal monitoring technology has advanced significantly since they were developed in the early 1960s. Years ago, collars would cut into bears' necks. Other unsuccessful efforts included internal implants, subcutaneous implants and ear-tag transmitters, all of which had significant drawbacks.

Unfortunately, 18 of the collars were too big for the young bruins, says Bialobzyski. The team could use only the small and medium-size collars, which resulted in an uneven sex ratio. Only 13 female bears, which are smaller and require a smaller home range, were collared, compared with 29 males.

Despite the challenges, the collaring initiative is still a golden opportunity for conservationists to learn more about bear rehabilitation. It's "unusual for biologists to work on juveniles, [so] having a group like this is pretty unique," says Schwantje, B.C.'s wildlife veterinarian emeritus who is globally respected for her decades of research on wild sheep and caribou. It's a "tremendous data set."

> "Are we **HELPING** them, or just **FEEDING** them?"

Schwantje sees the collaring as vital to determining whether Northern Lights' rehabilitation efforts truly prepare bears for success in the wild. "Are we helping them, or just feeding them?"

Normally, cubs spend from one to two years with their mothers, a learning experience that "you can't replace. We don't know how they learn from their mom. We would need a camera to follow them 24/7," she says.

Schwantje also ponders whether the youngsters' early deprivations will affect survivability. Most of the cubs were starved, orphaned and injured and it is uncertain whether they'll grow into normal, healthy adults, she says.

The entire team hopes the collaring effort and data collection will answer another critical concern: will the cubs whose mothers were killed as nuisance bears follow in maternal paw prints and gravitate toward easy backyard pickings? "Will they simply get into human-bear conflict?" asks Schwantje. "Is it more humane to euthanize them?"

THE DATA gleaned from collaring is larger than Northern Lights — it may be critical for black bears' future in B.C.

In 2022, Parks Canada released a warning that black bear populations

OPPOSITE PAGE: ANTHONY BUCCI

THIS PAGE: Black bear cubs, like this one photographed on Vancouver Island, stay with their mothers for one to two years. **OPPOSITE, clockwise from LEFT:** Wildlife veterinarian Helen Schwantje assists with collaring; Schwantje evaluates the bears' health prior to their release; the bears are sedated, then tagged, collared and blood and hair samples are taken.

across the country are being "depleted as a result of habitat destruction, over-hunting, international trade and human ignorance." And although the provincial government considers the black bear population to be stable, it warns that the animals are under increasing pressure from development such as farms and hydro reservoir proposals and from traffic deaths, poaching, logging and the collapse of salmon stocks.

But B.C.'s provincial Ministry of Water, Land and Resource Stewardship admittedly has little data on black bear population changes. Ministry spokesperson Katie Norris estimated B.C. black bear numbers at 120,000 to 160,000, but the numbers aren't certain, as black bear population surveys aren't prioritized because the province doesn't recognize them as at risk, Norris wrote in an emailed statement.

Barb Murray of B.C.'s Bears Matter, her advocacy platform that opposes trophy hunting and seeks to preserve habitat, wants to see an end to the province's spring black bear hunt, held from April 1 to June 15, right around the time females are out foraging with their newborn or yearling cubs. Weighing from three to five kilograms, the tiny cubs are extremely vulnerable and perish quickly without mom. While it's illegal to hunt mother black bears, Murray says most hunters can't distinguish male bears from females, and if a mother bear detects danger, she will hide her cubs in a tree or bush and draw attention to herself.

Black bears are being **KILLED** as they enter municipalities in **SEARCH OF FOOD**.

"The killing of adult female black bears that are supporting dependent young is a concern of the B.C. government," Norris wrote. "Hunters are prohibited from shooting a black bear that is less than two years old or any bear that is in its company (i.e., the sow)." Norris noted the hunters are provided with "guidance" on distinguishing females from males.

According to a 2020 technical report by Garth Mowat, a large carnivore specialist with B.C.'s Ministry of Forests, Lands, Natural Resource Operations and Rural Development, not only are black bear populations likely on the decline, but females are, indeed, being shot, "often misidentified as males."

"Anecdotally, many hunters have reported seeing fewer black bears in southeast B.C. over the last two decades," Mowat wrote.

But beyond hunting, black bears are being killed as they enter municipalities in search of food. In Prince George, at least 76 bears were killed in 2023, more than double the previous yearly average of 35. Part of the problem, says

FROM LEFT: Angelika Langen (left) and the Northern Lights crew prepare a sedated bear for release into the wild; graduate student Emma Bialobzyski holds a tracking collar; a collared black bear is released.

Langen, is that Prince George "planted crab apple trees in the boulevards, and the fruit brings the bears in."

In Smithers, where Langen lives, 24 bears were killed that year. Langen recalls one resident who refused to remove the apples from her tree or install a fence. Instead, the woman shot the bears that came to her yard.

Easy access to a high-sugar food source like tree fruit also artificially fattens the females, sometimes causing mothers to birth three to four cubs at a time instead of the usual one or two. "This raises the number of bears that actually can't be properly sustained by the amount of food that exists in the wild," Langen says.

Langen says that there is an easy solution to these "nuisance bears": eliminate fruit trees from communities or put unscalable fences around them. She started a program last year called Bear the Responsibility, to educate people and municipalities on how to co-exist with bruins and how to deter bears from visiting fruit trees when they ripen in the fall, thus lowering the need to shoot the animals.

There's evidence these deterrents work. Nelson, B.C., for example, urges citizens to pick the fruit off trees before ripening, to knock off spring blossoms to prevent fruit growing or, ideally, to replace fruit trees altogether. In 2023, Nelson reported only one bear fatality, down from 21 the previous year.

BIALOBZYSKI IS NOW sifting through the data streaming in from the collared yearlings released last spring. She and the Northern Lights team are working to understand how far the bears venture away from the places they're released, and why.

Yearling black bears are currently freed at least 25 kilometres from any site where there is human activity. Some only ever travel 10 kilometres from the area, while others go much farther.

One collared black bear yearling released north of Prince George immediately set out on a 250-kilometre odyssey to a remote mountain range. "It's truly amazing to see that," Bialobzyski says. "What's driving her to these remote areas and away from the habitat that we released her in?"

As for the yearlings released at François Lake? The fate of Kocoum and Figaro is unknown, as these young bruins were released without GPS collars. Rose and Madame Min's collars are still being picked up by Bialobzyski — a reassuring sign that they're surviving. After the release, the two youngsters went their separate ways and "appeared to move normally throughout the active season," Bialobzyski says. Both snuggled into a den for the winter, and are still being tracked, beating the odds and helping to ensure a future for B.C.'s black bears. ❋

"FOOD IS EVERYTHING WE ARE"

FOR DIASPORAS, FOOD IS A CULTURAL WAYPOINT, SERVING AS A TETHER TO HOMELANDS AND CONNECTING COMMUNITIES WITHIN CANADA

KARENE-ISABELLE JEAN-BAPTISTE

onday: 9:00am - 7:00pm
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Restaurant Ger Salakot offers members of Winnipeg's Filipino community, such as Hazel Venzon and David Oro, an authentic taste of home.

OUR MOTHERS’ FOOD

For Winnipeg’s Filipino community, food is a bridge to the motherland

BY **PRIMROSE MADAYAG KNAZAN** WITH PHOTOGRAPHY BY **APRIL CARANDANG**

“WHAT IF I NEVER eat her pancit again?” The thought came to me while my mother was hospitalized and placed on life support, when I was feeling disheartened by the ventilator’s rhythmic artificial breath. Thankfully, a dedicated healthcare team and her Filipina stubbornness pulled her through. Days later, when she was ready to eat, she balked at the hospital pasta and said, “I want rice.” My aunt brought her lugaw, a savoury ginger-garlic rice porridge. That was when her true healing began.

Comfort food is often our mothers’ food, the dishes we crave in times of joy and in despair. For a diasporic population far from their mothers’ tables, whether new immigrants or first, second or third generation, cultural cuisine serves as the tether to their motherland. It’s the bridge that connects family and culture in Canada, a nation of immigrants. While poutine is considered the quintessential national dish, our cuisine reflects the mosaic of our population; bannock, tourtière and ketchup chips join perogies, jollof rice, kebabs and phō in our culinary profile. Food is home.

Primrose Madayag Knazan's novel and cookbook Lessons in Fusion *explores the connection between food, culture and family. April Carandang is a Filipino urban culture photographer based in Winnipeg.*

But there can be growing pains. As a child, I was teased for eating fried Spam, accused of eating dog food. I then refused to eat my mother’s cooking. I wanted to be “normal” and eat fish sticks and fries. My exception was her pancit, which I had reasoned was the Filipino version of chow mein with vegetables, chicken and rice noodles tossed in soy sauce and garlicky broth. I rediscovered Filipino food as an adult with a new appreciation for its savoury-sour aromatics.

Winnipeg, my home, has the largest Filipino population per capita in Canada. Dozens of Filipino restaurants serve the community, ranging from family restaurants to fusion cuisine and Philippine chains offering everyone a taste of home. One of them is Ger Salakot.

Offering classic Filipino dishes made with high quality ingredients, the counter-service restaurant is turo-turo style, literally translated as “point-point.” Customers order off the daily whiteboard menu or point to the steam table loaded with unlabelled trays of ulam, stew served over rice. A few tables dot the space, but most people bring their plastic containers home.

Ger Salakot is inside the Philippine Canadian Centre of Manitoba, a community hub featuring a social hall, stage, and small businesses. In 2013, the cone-shaped structure atop the building caught the eye of Chef Gerome Labial, who noticed its resemblance to a salakot, or traditional Philippine hat. He says, “I always dreamed of owning a restaurant, and Salakot’s owners wanted to sell.”

In the Philippines, Chef Gerome worked his way from dish washer to head chef of a Chinese restaurant. When he immigrated to Canada, he worked in a hotel kitchen catering

Chef's Choice

banquets. After buying Salakot, he and his wife, Princess, ran the restaurant with a few of the original staff. He crafted new recipes, distilling the menu down to popular dishes that sold out daily. By 2022, the restaurant was successful enough to invest $400,000 to upgrade the space to match the commercial kitchens where Chef Gerome had paid his dues. Only then did he proudly add "Ger" to the restaurant's name.

We choose a variety of dishes from Ger Salakot's menu: sweet and sour fish fillets with peppers; sisig, minced pork jowls; dinakdakan, chopped pork topped with red onions, chilies and lemon; lechon kawali, deep fried pork belly; and their best-selling kare-kare, beef and tripe in peanut sauce served with house-made bagoong, fermented seafood paste.

As I stand at the Ger Salakot counter, I point to the pancit that resembles my mother's version. April, our photographer, orders sinigang, pork and cabbage tamarind soup, a dish my mother cooked weekly. For dessert, I get kutsinta, an orange mochi-like rice cake topped with shredded coconut, one of my mother's go-to potluck dishes.

We are far from the **Philippine shores**, yet the **PHILIPPINES** is with us.

Several friends have joined for lunch at Ger Salakot, a group spanning different generations and community connections. We are far from the Philippine shores, yet the Philippines is with us, embedded in the loaded paper plates at the centre of the table, ready to be shared family-style.

Kain na! Let's eat!

Filipino food is meant to be communal, cooked in large quantities to serve a family over several meals. Our cuisine is peasant food, not as in food for peasants, but as in the culinary category of cuisine where regional hearty stews are served with starch to stretch tough cuts of meat. Peasant food equals comfort food: shepherd's pie, spaghetti Bolognese, ulam and rice.

Aida Champagne of the Filipino Seniors Group finds it impractical to cook large pots of ulam for her solo meals. Like other hard-working Filipinos, she depends on turo-turo

GER SALAKOT
CANADIAN CENTRE OF MANITOBA

OPPOSITE, clockwise from TOP LEFT: Menudo, a Filipino stew of pork, liver, potatoes and carrots in a tomato gravy; Gerome Labial, chef at Ger Salakot; lemon is squeezed over sisig. **THIS PAGE:** "Salakot" in the restaurant's name (ABOVE) refers to a traditional Philippine hat; David Oro (TOP RIGHT) and Octavia Cayetano (BOTTOM RIGHT) enjoying rice, a staple on any Filipino table.

restaurants like Ger Salakot to buy a little of everything for that taste of the Philippines after a hard day, calling it "a fiesta at home."

Our group take turns sharing their favourite Filipino dishes. Hazel Venzon and David Oro, a married couple and founders of multimedia production company UNIT Productions, go first. Hazel recalls her aunt's ginataang langka, jackfruit and shrimp in coconut milk. "I was surprised that jackfruit pulled like meat," she says. This was long before unripe jackfruit had become a vegan staple. David says kare-kare is his favourite dish because "the flavour is so uniquely Filipino," referring to its savoury funk.

Instagram food blogger Denice Cayetano (@wpgfoodlovers) strives to serve Filipino food to her children, Octavia and Ozias, modestly saying, "I cook simple things like sinigang or tinola," yet these "simple" tamarind and ginger soups are the foods that will bind her children to their culture, reminding them of family and home.

My son, Silas, pulls apart each layer of lechon kawali, savouring the crispy skin, unctuous fat and meaty pork. He announces his favourite Filipino food is Spam. My mother often cooked fried luncheon meat and rice for my kids, as she had made for me as a child. I recently listened to an episode of *The Sporkful* podcast, "How Spam became a Filipino staple"; American soldiers would trade the salty canned meat for fresh eggs during the Second World War, cementing Spam's place in Philippine larders.

After lunch, we pack the remaining food into take-out containers. The sign of a successful Filipino meal is when your guests take home baon, leftovers for lunch. Little Octavia asks her father if they could buy more kutsinta to take home. I offer the package with the last three rice cakes. Her father thanks me and says, "It's her favourite."

I pack up rice and sinigang to bring to my mother in the hospital to offer a bit of home while she is away from home. Perhaps the soup will feed her soul, as her food has always fed mine. ❈

CHASING Manchurian

Finding a taste of home in Vancouver's Indian-Chinese restaurants

BY **SHARON NADEEM** WITH PHOTOGRAPHY BY **JENNIFER GAUTHIER**

THE FIRST TIME I HAD Indian-Chinese food in Canada was when my roommate and I were cycling back from our first long bike ride together. Around 40 kilometres in, we started talking about what we wanted to eat. I was craving chicken Manchurian and fried rice, I said, not expecting her to point out a slight detour that would take us to popular Indian-Chinese restaurant Indian Wok. We rushed over before it closed, finishing the ride with the take-out bag hanging from my handlebars. I could smell the rich aroma of the spices in the Manchurian all the way home. When I took my first bite, I nearly cried. I was transported back home to India.

While many in Canada know and love Indian and Chinese food separately, few know about the marriage between them. The union can be traced back to the late 1700s, when Hakka Chinese immigrants settled in Calcutta (now Kolkata), in the northeastern state of Bengal. Chinese silk traders, dentists, carpenters, shoemakers and tannery owners flocked to what was then the capital of the British empire in India — and discovered a variety of local spices and ingredients. They started combining the deep, spicy Indian flavours from ingredients like red and green chilies with ginger, garlic and staple Chinese bases like soy sauce and vinegar, giving birth to what is now known commonly as Indo-Chinese or Hakka cuisine. The first few restaurants to serve this cuisine started in Tiretta Bazaar and Tangra, the two Chinatowns in Kolkata.

Soon, it spread in popularity all over India. Dishes like Schezwan chicken, which substitutes dry red chilies for Sichuan peppercorns, and gobi Manchurian, where cauliflower is coated in thick batter, deep-fried and tossed in spicy soy sauce with onions, green chili and garlic, are staples.

In Vancouver, these dishes can be found on Kingsway and Victoria at Green Lettuce, whose owners, Lucy and Peter Chang, embody the history of the cuisine. “I'm 100 per cent Chinese, but my parents immigrated to Kolkata, and I was born and brought up in India,” says Lucy. Peter and his brother-in-law Winston started the restaurant in 1999, wanting to introduce this unique flavour to Vancouverites. At the time, it was the first Indo-Chinese restaurant in British Columbia. A few years later, Winston left to open a Green Lettuce branch to serve the large South Asian population in Surrey, and Lucy officially joined Peter at the restaurant.

“Now you know how old I am,” says Lucy with a laugh. You wouldn't know because of the energy and warmth she brings to the place, constantly checking in with customers at every table and asking for feedback. She's even received celebrity endorsements. Photos of famous Bollywood personalities including Aishwarya Rai, Hrithik Roshan, Sridevi, Lata Mangeshkar and Sonu Nigam with Lucy and Peter at the restaurant adorn the entrance wall. “These Indian film stars were so trendy … it felt really special when they came to the restaurant,” says Lucy.

Lucy's brother Ian and his wife Sophia run Indian Wok. “When people eat at my restaurant, they are usually really surprised that Indian spices compliment Chinese-style cooking so well. It's the best of both worlds,” says Ian. His gobi Manchurian was perfectly deep-fried and crisp, and the sauce had that special robust, spicy flavour, so perfect it got its own name. What comes through in the food — and is shared between cultures — is the central role food plays in bringing people together. “For Chinese people, any occasion revolves around food. It is what connects people, families,” says Lucy.

All my life, I thought I grew up eating Chinese food, until I moved to Vancouver in 2016. Since then, I have been seeking restaurants in the city that add the Indian twist, a quest most South Asians relate to. At Green Lettuce and Indian Wok, I found that portal home. Fittingly, the tagline for Green Lettuce is “Just The Taste Will Bring You Back.”

Sharon Nadeem is a journalist and producer at the Global Reporting Centre. Jennifer Gauthier (jennifergauthier.com) is a photojournalist based in Vancouver.

INDIAN WOK Restaurant
INDIAN STYLE CHINESE CUISINE
Chetime
MIKE BHAYANA
604.725.8854

Clockwise from TOP LEFT: the much-sought gobi Manchurian (centre) at Indian Wok; Ian Chung cooks up a storm; Sophia and Ian Chung with a freshly-cooked assortment of dishes. One of Ian's favourite dishes (and the author's) is chili chicken – battered and deep-fried chicken stirred in copious amounts of red chili, garlic and ginger, and an overdose of soy sauce, giving it that deep-red colour that is quintessential to Hakka cuisine; Indian Wok in Burnaby, B.C.

GROWING
FROM GRIOT

A second-generation Haitian chef is using food to redefine what it means to be a Caribbean-Montrealer

BY **JP KARWACKI** WITH PHOTOGRAPHY BY **KARENE-ISABELLE JEAN-BAPTISTE**

IT'S LATE SPRING in the Village, and a Thursday night's just getting started at the pan-Caribbean Montreal restaurant Palme. Guests representing a cross-section of the city's diversity take up seats at a rhum-forward wraparound bar for cocktails. The invited veteran DJ Blaster starts to build a groove with soca rhythms of the West Indies, and the music spills onto Sainte-Catherine Street from the restaurant's open garage-style frontage.

Like the music, the plates here — griot, jerk chicken, accras, ceviche — pull from across the tropics, each one reworked with unexpected touches drawn from the chef's own inspirations. Hence the name: Palme is an homage to countries where palm trees can be found, from the Caribbean to South America, parts of Africa and Southeast Asia — all regions that shape the restaurant, and the communities it's grown to serve.

The restaurant's atmosphere and culinary leanings form a point of cultural exchange that reflects the second-generation reality of its Haitian chef Ralph Alerte Desamours and his Bahamian-French Canadian partner Lee-Anne Millaire Lafleur: how their heritage, upbringing in Montreal and travels coalesce to create something new. For Desamours, culture was always close. Born in Montreal to Haitian parents, home was where he first learned to cook.

"My Haitian roots begin with my family, my grandmother and the way she taught me how to cook a Caribbean cuisine," Desamours says. "My mom is a great cook as well, and I learned a lot from her, too. It's how I learned all the basics."

But while his own culture was always close, so was everything else. Growing up in the Montreal borough of Saint-Léonard, myriad cultures and the polyphony of their languages surrounded his own: Québecois, Italian, Arabic, Vietnamese, Portuguese. That early exposure set the tone for his career later in life, including stints at everything from French restaurants and high-capacity arena kitchens to a four-star Westin resort in the Cayman Islands.

When Desamours and Lafleur returned to Montreal in 2017, however, they wanted a space of their own to build on the legacy of the places they knew growing up. For the chef, that meant long-standing Haitian institutions like Méli-Mélo in Villeray and Restaurant Steve Anna in Saint-Michel, both fixtures since the mid-1980s. Instead, Palme would be more than a place to eat. It would be an experience — a space to gather, exchange, and reflect on the lives they'd lived.

Having spent seven years turning dining rooms into dancefloors, DJ Blaster (real name Sherwin Cumberbatch), originally from Trinidad, says Palme is a "home away from home" for him as well as many other members of Montreal's Caribbean communities.

"Back in the day, with my family, we would always get together to eat. It feels like that here," says the DJ. "There aren't many places to meet... To have your own, it's a whole different meaning."

Finding that balance of familiarity and modernity was always Desamours' intention.

"I didn't want to do the same thing everybody was doing in the Caribbean community, and it didn't make sense to simply recreate my grandma's cooking," the chef recalls. "What I do is a fusion of Caribbean cuisines, but with my own personal touch."

Desamours' cooking reflects the experience of being Caribbean in Montreal, where heritage and home intersect.

"At the end of the day, it's who you are and where you come from — that's what will make a difference in the dish," he says.

Chef Ralph Alerte Desamours' (ABOVE) cooking, such as his creative twist on griot (BOTTOM RIGHT), shows Montrealers (RIGHT) that Caribbean food is a living and evolving cuisine. DJ Blaster (TOP RIGHT) provides the beats.

When asked which dish best embodies his combination of heritage and lived experience, he says it's his own griot: enhanced with a fragrant hot honey, Palme's signature pork is accompanied by riz aux pois, plantains and a mixture of watercress, cauliflower, carrot and radish — far more vegetables than is traditional.

But it's not about reinventing tradition for the sake of it; it's about showing what tradition can grow into: Palme's menus have seen everything from Alsatian flammekueche studded with jerk shrimp to homespun pasta with earthy Haitian djondjon mushrooms and conch to a Chinese-inspired pineapple fried rice.

Desamours doesn't have grand machinations about changing how Haitian Montrealers understand and communicate their culture. "I'm just living day to day," he says, though he does relate to the sense of possibility others in his community have felt — that being Haitian in Montreal doesn't have to be fixed or nostalgic, and can instead be alive, evolving and personal.

"When we were opening Palme and looking at Caribbean restaurants in Montreal at the time — especially the canteens where we went as children — we knew we could build something different," Desamours says.

It's restaurants like Palme that give a glimpse into how new cultural third spaces — ones where inherited memory and lived experience converge — are being created.

"Sharing culture is a bona fide element of life, and food is the best way to break barriers. With food, you create bonds and bridges," the chef says. At Palme, those bridges stretch from Saint-Léonard to the tropics — and back to the table.

JP Karwacki is managing editor of The Main. *Haitian-Montrealer Karene-Isabelle Jean-Baptiste's photography has appeared in* La Presse *and* The Globe and Mail.

A LITTLE LEBANON

Edmonton's north side has sustained both appetite and tradition for more than half a century

BY **OMAR MOUALLEM** WITH PHOTOGRAPHY BY **AMBER BRACKEN**

HIDDEN AMONG the nondescript 1970s cul-de-sacs and strip malls of Edmonton's north side is a culinary enclave locals lovingly call Little Lebanon. You won't find white tablecloths or reservation lines here. This is casual, counter-service dining — family-run bakeries, grocers and kitchens where the garlic is punchy, the pita is warm and the food tastes like home.

At the heart of it all is Canada's historic Al Rashid Mosque, which relocated here in 1982 after nearly 50 years downtown. In the 1970s and '80s, the Lebanese Civil War triggered a wave of migration, and Edmonton's small but established Lebanese community played a vital role in helping relatives flee the violence — sponsoring them, finding them work and helping them resettle. As these new arrivals joined the growing community, many made their homes in what were then new suburban neighbourhoods on the north side — and with them came the businesses that sustained their traditions. Over the decades, their numbers swelled from a few hundred to more than 15,000. Today, the strip malls around Al Rashid bustle with the food, services and spirit of the old country.

I start at Castle Bake, tucked beside a daycare in a quiet suburban plaza. From the outside, it's unassuming, but inside feels like a small Levantine palace. Arabic calligraphy adorns the walls — verses from an eighth-century poem — alongside black-and-white family portraits of the Haymour clan and images of Old Sana'a, Yemen (the family proudly traces its origins to the ancient Himyarite Kingdom). The Haymours — 11 siblings strong — opened Castle Bake in 2010, but their story stretches back decades, to when their late father, Hamad, immigrated to Edmonton and eventually ran a burger joint called Baron Burger — a shameless knock-off of Burger Baron, the quirky Alberta chain with its own legacy of Lebanese entrepreneurship. Like many families of that era, they leaned into western-style fast food because it was easier to sell than toum and tabbouleh. Castle Bake, though, became their way of returning to the flavours of home.

I meet co-owner Saif Haymour over a platter of man'eesh flatbreads and feteh — a layered dish of toasted pita, chickpeas, garlic yogurt and toasted nuts. You rarely see it on menus, even though it's a staple of Lebanese homes. During Ramadan, people often come here for suhoor, the pre-dawn meal, before heading to the mosque for Fajr prayer, which marks the start of the fast. "I remembered how in Lebanon every bakery was open in the middle of the night, so we decided to bring that here in Edmonton," Haymour tells me. "It's packed every night from 10 p.m. to 4 a.m."

From Castle Bake, I head to the places that really feed the community: the grocery stores. The fact is, most Lebanese families still cook at home, so there aren't as many authentic Middle Eastern restaurants in the community as one would wish. The grocery stores are the true hubs of social and cultural life.

The undisputed grocery king of Little Lebanon is Elsafadi Brothers. Walk through its front doors, and it's like being teleported to a Beirut supermarket. At the deli counter, I eye soft baladi cheese and oily labneh balls. Owner Waleed Elsafadi explains that his father started by peddling produce and Middle Eastern imports out of a truck back in the 1950s. His sons built on that legacy with the first of two (soon to be three) supermarkets in 1985. Now, they stock over 15 exclusive product lines — everything from makdous (preserved stuffed baby eggplants) to halal marshmallows. "We manufacture our own products strictly for our stores," he tells me. "It's like our version of President's Choice."

Right next door is Paradiso Pastries, a longtime staple known for its daily-made baklava. The pieces are chewy, syrupy and sold by the box or individually wrapped like jewels. But I never leave without my real favourite: the

Omar Mouallem is an Alberta-based writer, documentary filmmaker and educator. Amber Bracken is an award-winning photojournalist based in Edmonton.

PREVIOUS SPREAD: Family photos at Castle Bake centre on the family's patriarch, Hamad Haymour, who passed away in 2020. A variety of man'eesh (RIGHT), flatbreads topped with za'atar, salty cheese or minced meat, at Castle Bake. **OPPOSITE:** Saif Haymour (TOP), the late Hamad's son, is now the co-owner of Castle Bake on Edmonton's north side; writer Omar Mouallem digs into a meal of man'eesh and feteh (BOTTOM) at the restaurant. **THIS PAGE:** Waleed Elsafadi (TOP) is the owner of Elsafadi Brothers Mediterranean Supermarket, where they manufacture a line of their own products. Trays of baklava (BOTTOM), made fresh daily, at Paradiso Pastries next door.

knafeh sandwich. If you've never had knafeh, imagine warm, stretchy cheese under a crispy layer of semolina or shredded phyllo, soaked in rosewater syrup. When stuffed inside thin sesame bread and eaten on the go, it becomes the Lebanese version of a breakfast sandwich. Growing up, we'd eat knafeh for dessert after Ramadan feasts — then again the next morning, pressed between pita. Decadent? Yes. But somehow still breakfast.

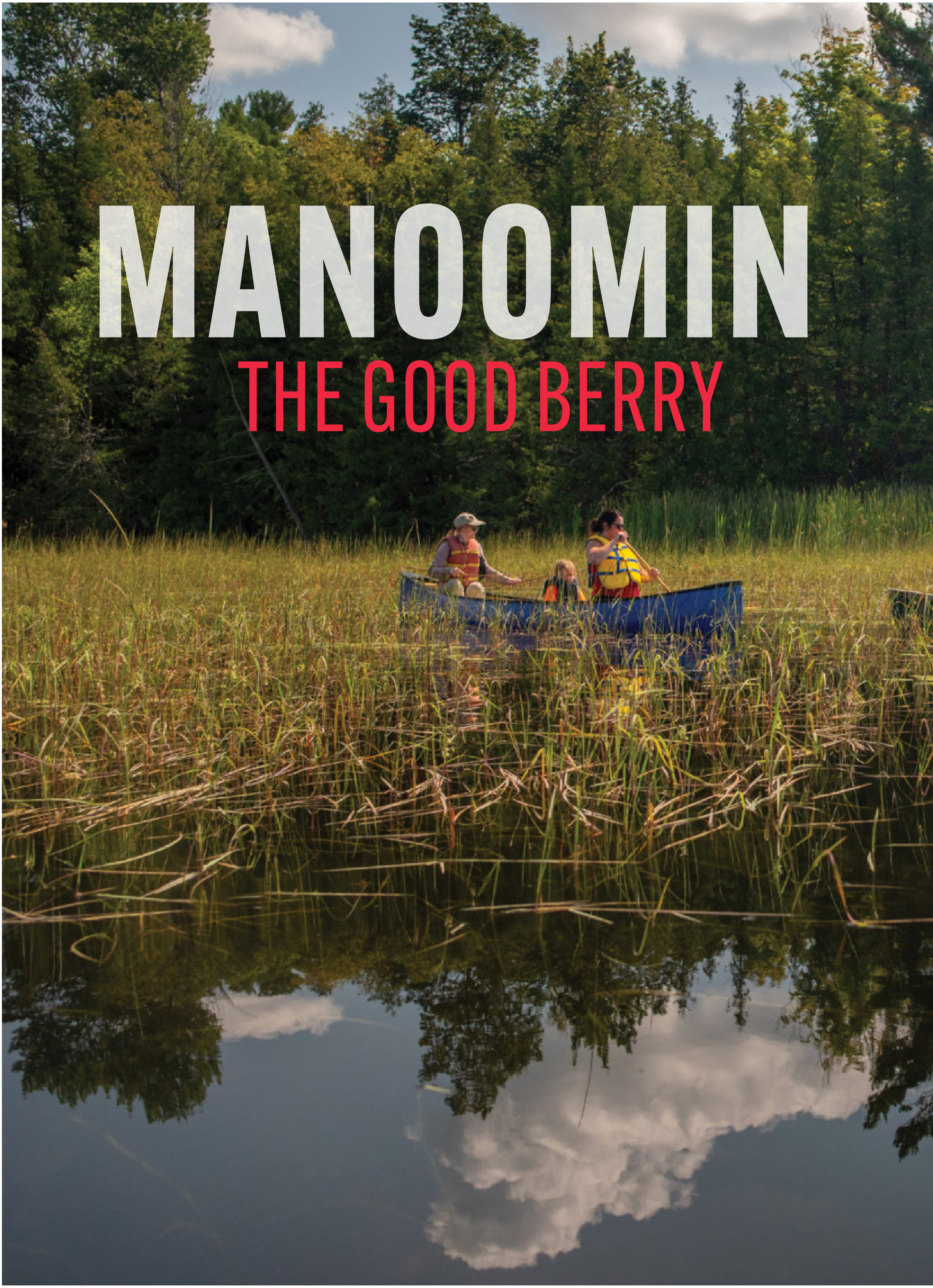
Just down the block, a strip mall near Al Rashid Mosque hums with Lebanese businesses: an Islamic fashion shop, a hookah store, a halal butcher and even a halal pizzeria. At Cedar Sweets, I pop in for a taste of booza — Arabic ice cream. Its silky, stretchy texture comes from salep, a flour made from wild orchid tubers. I always go for the rolled ashta flavour, the rich clotted cream offset by a dusting of pistachios and rose petal flakes.

I end up at Sunbake Pita Bakery, where brothers Abdallah and Gehad Mouallem (yes, we're related) walk me through the newly renovated kitchen. Known as Alberta's top pita supplier, Sunbake is also *the* spot for man'eesh — flatbreads topped with za'atar, salty cheese or minced meat. They churn out hundreds every hour from a flaming rotary pizza oven imported from Italy. Behind the scenes, women fold dozens of fatayer — meat and spinach pies — filled with lemony tart greens or savoury spiced beef.

New on the menu is rotisserie chicken: butterflied, marinated for three days, turned over in a rotisserie oven, then smoked over coals to order. As I leave with one tucked under my arm, along with a sack of spiced Lebanese nuts, my car fills with the smell of garlic, cumin and charcoal. The smell of the homeland — even if you've never been.

MANOOMIN

THE GOOD BERRY



THROUGHOUT THE GREAT LAKES, ANISHINAABEG COMMUNITIES WORK TOGETHER TO SOW THE SEEDS OF SUCCESS FOR WILD RICE

STORY AND PHOTOGRAPHY BY **SHELBY LISK**

EVEN WITH A BALL CAP ON, Ryerson Whetung still squints looking out over Chemong Lake in the intensity of the early-September evening sun. “Our waterways have never been surrendered,” he says, as he makes himself comfortable in the back of his uncle Billy’s canoe. Through the tall grass-like plants behind him peek glimpses of cottages on the shore across from Curve Lake First Nation.

As Ryerson waits for his uncle to join him, he quietly opens a leather pouch decorated with intricate beadwork. Removing a pinch of medicine and reaching down, he opens his hand to release an offering of asemaa (tobacco) atop the shimmering ripples, as small bugs dance along the surface of the water. “Our Ojibwe bands down here, we put [into our treaties] that we did not want a dwelling within 20 metres of the waterway, and that was to be able to protect the waters,” he says, referencing Treaty 20, also known as the Rice Lake Purchase, signed in 1818. “Those treaties have been violated, because you can go to any lake in the Kawartha Lakes region and you can find a cottage, you can find a dock, you can find a boat house. You can find restaurants, nuclear plants and dams. You can find all this within 20 metres of the waterway. We are being stolen from by all of these entities that think that they have some rights in the waters.”

> “ **Every time we go and harvest Manoomin,** we are acting in resistance, we are acting in resilience, and we’re thriving as a people. ”

He looks down to see the asemaa slowly sinking as sunlight glints through the clear lake, a beam illuminating the water to the aquatic plants below. This clear, shallow water is vital for the growth and survival of one of the community’s most cherished plant relatives: Manoomin. “Without the land, without the water, without the animals and without the Manoomin, we’re not Ojibwe people,” says Ryerson. “Every time we go and harvest Manoomin, we are acting in resistance, we are acting in resilience, and we’re thriving as a people.”

Manoomin, also known as *Zizania aquatica* or *Zizania palustris* to scientists and as “wild rice” in English (although it is not a rice but actually North America’s only native cereal grain), thrives in the shallow and slow-moving fresh waters of the Great Lakes. Because Manoomin needs to be reseeded every year, it

PREVIOUS SPREAD: Curve Lake ricers paddle through a Manoomin patch. **THIS PAGE, FROM LEFT:** Ryerson Whetung (left) and his uncle Billy Whetung (right) float among the Manoomin on Chemong Lake; Ryerson's medicine pouch sits in the belly of his canoe, holding a tobacco offering.

does best when it lives in relationship with human and non-human relatives that help to move the seeds around.

While communities have variations on the spelling of Manoomin (Manomin, Mnomin, Mnoomin), they all carry a similar translation. To the Anishinaabeg, Manoomin is "the good berry" or "the good seed" and is an important grain that they have cared for, relied on for sustenance and honoured in ceremony since their migration to the region thousands of years ago, when they came in search of the prophesied "food that grows on the water." Manoomin continues to offer a path for the Anishinaabeg today — now to a sense of belonging, cultural connection and fulfillment of their original instructions from the Creator to be caretakers of the land and waters. When they translate Manoomin as "the good berry," the "goodness" that the name refers to is the beneficial relationship to the Anishinaabeg and all their relations. They truly mean that this seed represents only goodness: for your body, for the animals and for the environment.

Shelby Lisk (@shelbyliskphoto) is a Kanyen'kehá:ka artist, photographer, filmmaker and writer based in Tyendinaga Mohawk Territory.

Billy Whetung points towards the Manoomin growing in the middle of the water, a patch he estimates to be about 180 metres wide, remarking that his Elders say there was a time when Chemong Lake used to be so full of Manoomin that there were only a few small paths through the plants, just wide enough for canoes to move through. "My Elder told me, from the beach, as far as you could look down this lake was rice." But the Manoomin was flooded and nearly decimated by the rising water levels that accompanied the addition of the lock and dam systems along the Trent-Severn Waterway. "My Uncle James [Whetung] travelled to Ardoch and got rice seed and reintroduced it to Curve Lake waterways about 40 years ago," says Billy, "and it's just now come back to the point where we can have a community harvest each year."

Adds Ryerson, "One of the big reasons why they [flooded], specifically these lakes, was a tactic by the government to get rid of the Indians. Because that was our main food source, and if we didn't have that, why would

Billy Whetung (OPPOSITE) knocks Manoomin from the stalks. **THIS PAGE:** Caleb Musgrave (RIGHT) carves a ricing stick. Manoomin (BELOW) is ready to be winnowed.

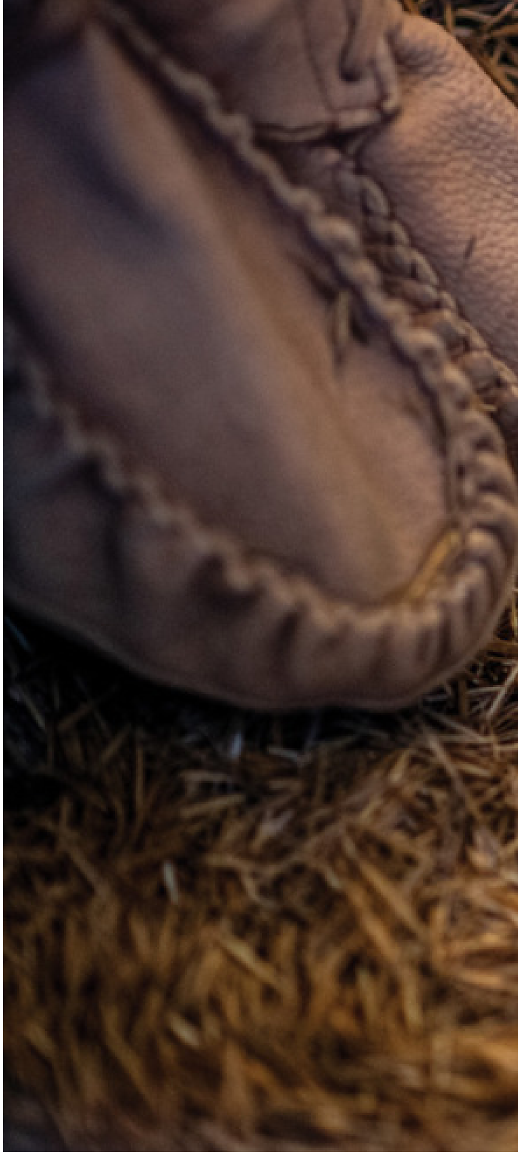
we want to live here?" If the water levels are raised before the Manoomin shoots poke out of the water, the plant doesn't have enough energy to grow through the water and reach the air. But once it passes the water's surface, in the "floating leaf" stage, around June, it needs air to continue growing, and if the levels are raised at this point, the plants will drown. Conversely, if the water gets lowered later in the summer, when the plants are standing tall, the stalks will fall over and possibly break.

A speedboat zooms past the men, rocking their canoe, but the relatives pay no attention as they talk and joke back and forth. Billy joins his nephew in the boat with the ease of an experienced canoer and takes up his position paddling, while Ryerson holds two cedar "rice knockers" or "thrashing sticks" at the ready. "Gathering," "ricing" and "knocking" are all terms used by "ricers." In Anishinaabemowin, "our word is bawaam," says Ryerson, explaining that it means he or she knocks rice. "You've got your ricing sticks, you're hitting that rice, and what's that sound you're hearing? BA-WAAM!"

As they glide through the Manoomin, Ryerson reaches behind with one arm, pulling a small bundle of the plant over their canoe with one wooden stick, using the other to tap, carefully knocking down twice — bawaam! bawaam! — on the bent stalk, scattering the ripened seeds around his feet in the bottom of the canoe. A few land back into the water for the animals to eat or to reseed the plant for future years.

Billy picks his canoe paddle up high out of the water, over the tops of the Manoomin stalks, taking care to disturb them as little as possible as he pulls the canoe slowly through the aquatic garden. The two men move back and forth, back and forth, until only the tops of their heads are visible, and then they disappear into the Manoomin entirely. Back at the shore, they bag up every last grain of Manoomin from the bottom of their canoe as the sun ducks behind the treeline, leaving traces of light pink just above the horizon and a nip in the air.

THE HARVEST SEASON begins as the Manoomin seeds turn from green and milky to a reddish-brown colour in the late days of August and early September. The plant ripens slowly



from the top of the seed head to the bottom, over several days or a couple of weeks, so this patch can be revisited in a few days to gather again. But the window for collecting Manoomin is short, typically only about two weeks long, and can be difficult for families to accommodate around the start of the school year.

The transmission of knowledge and seasonal access to the Manoomin harvest was greatly disrupted when Anishinaabe children started being forced to participate in the colonial school system. "Residential schools made it exceptionally difficult for families to pass down their plant knowledge and their plant teachings on the land and in season," says Brittany Luby, professor of history at the University of Guelph and a descendant of Niisaachewan Anishinaabe Nation in Treaty 3.

Settler colonialism brought the suppression of Indigenous hunting and gathering rights, along with growing human interference along waterways. These impacts, as well as climate change and invasive species, threaten the plant and have even caused it to disappear from certain lakes and rivers. Even still, every year in late summer, families in Anishinaabe-Aki get into their canoes to gather, honour and feast on Manoomin. And bringing in a canoe full of Manoomin is only the start of the work to prepare to eat, sell, share, trade and reseed the plant for future generations.

> **To the Anishinaabeg, Manoomin is "the good seed"** and is an important grain that they have cared for, relied on for sustenance.

THROUGH A CLEARING OF TREES off a dirt road in Hiawatha First Nation, Caleb Musgrave sits by a fire carving a cedar rice knocker, a basket full of Manoomin at his feet and a large kettle warming in the fire.

As part of his complex network of land-based knowledge, Musgrave has spent more than 15 years honing his skills in Manoomin parching, which he says is the most delicate step in processing Manoomin. "This batch that I have in the basket was gathered four years ago," says Musgrave. Dry Manoomin "can keep for a long time until you're ready to process it." After gathering,

Clockwise from TOP LEFT: Caleb Musgrave demonstrates winnowing; ricers rock their mocs and dance to thresh the Manoomin; the Manoomin is ready to eat after a long day of ricing.

he submerged the bags of rice in water for a couple of days to kill off the rice worm moth that will eat away at it, and then laid the wet seed on a tarp, exposing it to sun and wind until it hardened and became tough enough to withstand the force of processing.

As Musgrave throws the seeds into the kettle, they have the colour and smell of a handful of straw or dried grass. He watches closely to see how the Manoomin moves, never looking away as he stirs it gently with a wooden paddle. As the tails start to get charred off and break down and oils are expelled from the seed, the Manoomin takes on a more fluid motion in the large cauldron and releases a rich nutty, oily smell. A good parcher must engage all their senses, observing how the seeds look, smell and move and continuously adjusting the temperature of the fire. Even the sound changes.

After the parching, children would often be the ones to lace on their moccasins and dance or jig on the Manoomin — stepping on the parched seeds to thresh them. The grains are placed in a shallow pit or hole in the ground lined with hide or a tarp and then stepped on until the friction loosens the inedible seed coat from the kernel inside. Then they are gathered up to be winnowed, and on a day with a nice breeze, the loosened husks and chaff will blow away, leaving just the edible seed, ready to cook and enjoy.

Luby emphasizes that in Manoomin camps, each community member

has a place, and children learn about their roles and responsibilities within the community and the ecosystem, in caring for the waters, plants, animals and future generations. Even something as simple as children's joy is seen as integral to their operations, as the sound of their laughter and play scares away larger animals like bears and keeps the community safe.

The intergenerational space also instills a sense of belonging; as children carry the knowledge that their ancestors have seeded and cared for the Manoomin, they see that they, too, will do so for future generations. "You can see people at different life stages contributing to their community, and you know you will always belong and have a role," says Luby. "How you participate may change over time, but for as long as you are in your earth body, you know you have something that you can give to your community."

Within that sense of community are also the non-human relatives that benefit from sharing their environment with healthy Manoomin patches, including many species of birds that feast on and help to spread Manoomin in their beaks and feathers as they travel to different waterways. In return, the plant provides protection, habitat, breeding areas and nesting materials. "Thousands of species are partially or tangentially dependent on Manoomin," says Musgrave. It also filters phosphates, nitrogen, potassium and other nutrients that flow from farmlands down into our rivers and waterways. Manoomin, says Musgrave, is "the kidneys and the liver of our waterways."

WHEN SETTLERS ARRIVED, they were threatened and taken aback by the independence and sustainable lives of the Anishinaabeg, fearing that there was nothing they could offer the people to motivate them to act in accordance with their religion, law and desires. Luby and her father, Allan Luby, who joined our conversation over the phone, have spent hours listening to stories about Manoomin from Elders in Niisaachewan. Allan recounts instances where a treaty commissioner said it was difficult to negotiate with Treaty 3 because of their abundant food supply. Harming the environment to starve Indigenous Peoples became a significant tactic of colonialism and land acquisition.

"We were, for a period of time, able to feed and to raise warriors to defend the territory. And when you jeopardize somebody's food supply, you jeopardize their ability to raise healthy families," says Brittany Luby. In 1873, when the community was negotiating Treaty 3 with the newly federated Canadian government, the leaders of Niisaachewan Anishinaabe Nation communicated their worry that food was becoming more scarce where it was once plentiful in the rivers and their wish that the rivers should be left as they were.

In the Trent-Severn Waterway, there has also been great cultural and economic loss to surrounding Anishi-

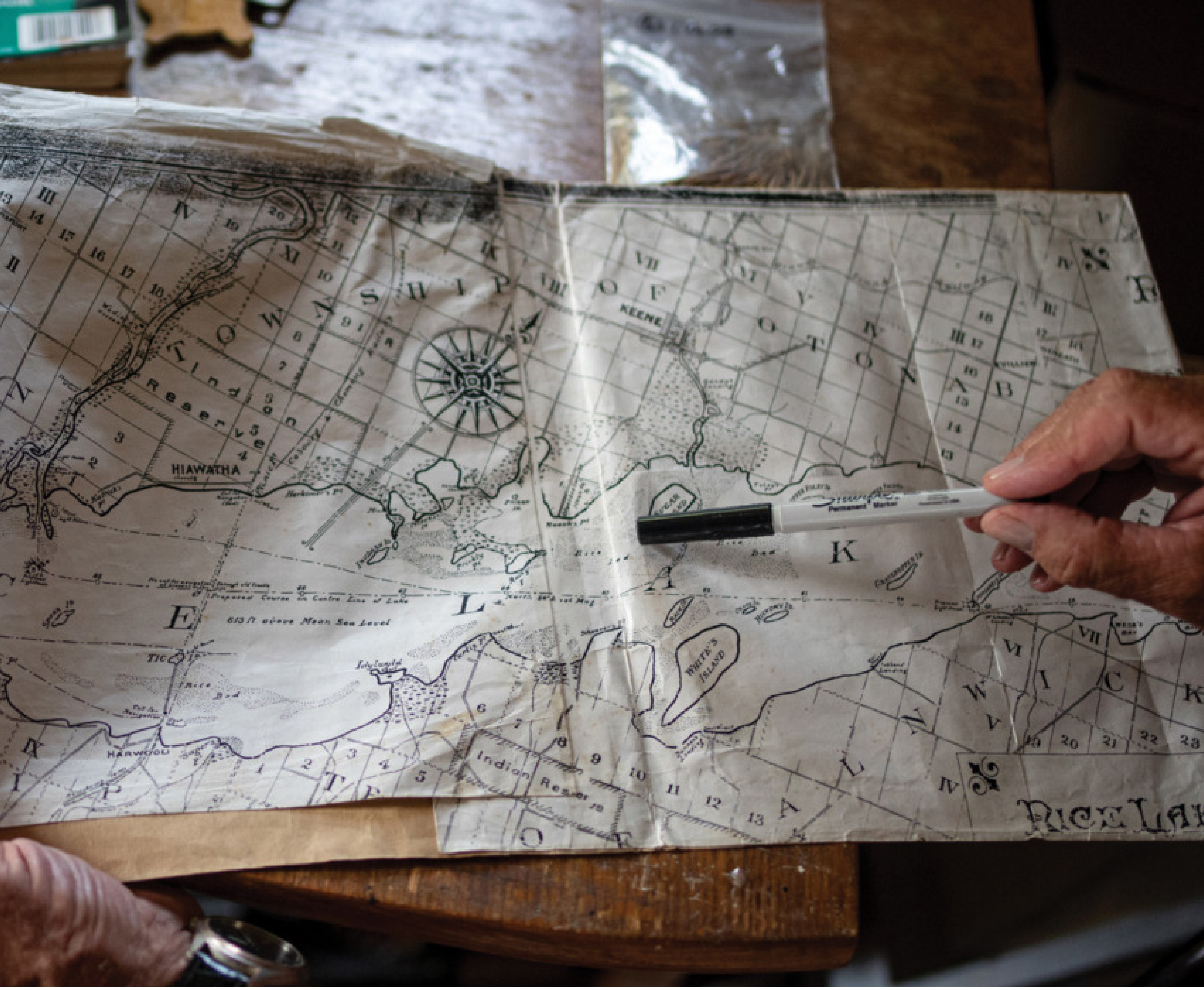
Curve Lake ricers (OPPOSITE) winnow the harvest together using a big tarp. **THIS PAGE:** the setting sun (TOP) peeks through ripened Manoomin; Jeff Beaver (BOTTOM) knocks rice into his canoe.

naabe communities. "Up until the completion of the Trent-Severn lock system, we had an average annual harvest of 10,000 bushels per year from Rice Lake alone. That's over half a million kilograms harvested annually, all done with canoes and ricing sticks," says Musgrave. "The financial independence and economic sovereignty of this community was stolen to build a lock system that was immediately obsolete when it was completed."

Despite Manoomin being such a delicate plant, Anishinaabe communities successfully maintained its ecosystem until settlers started to manipulate the waterways. "The oldest [Manoomin] fossil that I've heard of was located in northeastern Minnesota, and it dated back 10,000 years. So, it fits with our migration story," says Jeff Beaver, an avid ricer from Alderville First Nation who has been working on community Manoomin research for over 30 years. Archeologists have found evidence that people have been processing and cooking Manoomin for at least 2,500 years and that communities are still using many of the same methods to harvest, process and cook Manoomin today.

"Jeff Beaver is, for the Mississaugas of Rice Lake, the closest person we have to a ricing chief," says Musgrave. "When it comes down to Manoomin in this territory, I defer to Jeff for everything. If he says, 'don't pick in this area,' I don't pick in that area. If he says, 'go and gather over here next week; it'll be ripe by then,' guaranteed it's going to be ripe by then."

After moving around the country and working as a Parks Canada warden for 14 years, Beaver returned



Beaver shows where the Manoomin used to grow around Alderville First Nation. (ABOVE); Beaver looks over Manoomin seeds (OPPOSITE), freshly sown for future generations.

to Alderville in 1988 and became involved with Manoomin research before moving into full-time monitoring and management of the rice beds around 2008. He maps and restores the beds in the surrounding lakes and works with nearby schools to educate and offer students and community members hands-on experiences with Manoomin.

"We go around with a GPS unit, so as you paddle it's tracking you," says Beaver. He'll paddle around the perimeter of a rice bed so they can track which way it's spreading from year to year and reseed the beds in that direction. He also monitors the Manoomin beds to inform the community when it's ready to harvest. His restoration and monitoring work is funded within the community, something Beaver says is better than relying on provincial or federal government funding that might fluctuate or disappear from year to year, leaving them with missing data.

FROM THE BACK ROOM of his family's craft store in Alderville, Beaver pulls out old photos, newspaper clippings and maps from the archive he has compiled of community knowledge on Manoomin. On an old wooden desk, he unfolds a large map of Rice Lake, named for the Manoomin that used to be plentiful in the 28-kilometre-long waterway between Hiawatha and Alderville First Nations. Someone has written 1938 on the map, but Beaver believes it could be older. "The shaded areas — that's where the rice was on Rice Lake," says Beaver, circling the large, dotted areas labeled "rice bed" with the end of a pen, "There were still 2,500 acres [1,011 hectares] left when this map was made. It wasn't long after that that it was all gone."

Before the Manoomin was decimated, people used to travel by canoe from all over to gather in Rice Lake. Beaver hopes to restore the rice beds to a state where that will be possible again. His other hope is to educate people about Manoomin and its importance to the Anishinaabeg but also to the greater ecosystem. "If you can educate people about it and the value of it,

maybe they won't be so anxious to destroy it," he says, referring to its misidentification as a weed by cottagers who pull it out of the waterfronts. Beaver has worked with willing cottagers to make channels through the Manoomin so they can move across the lake in their boats with the least amount of disruption to rice beds as possible.

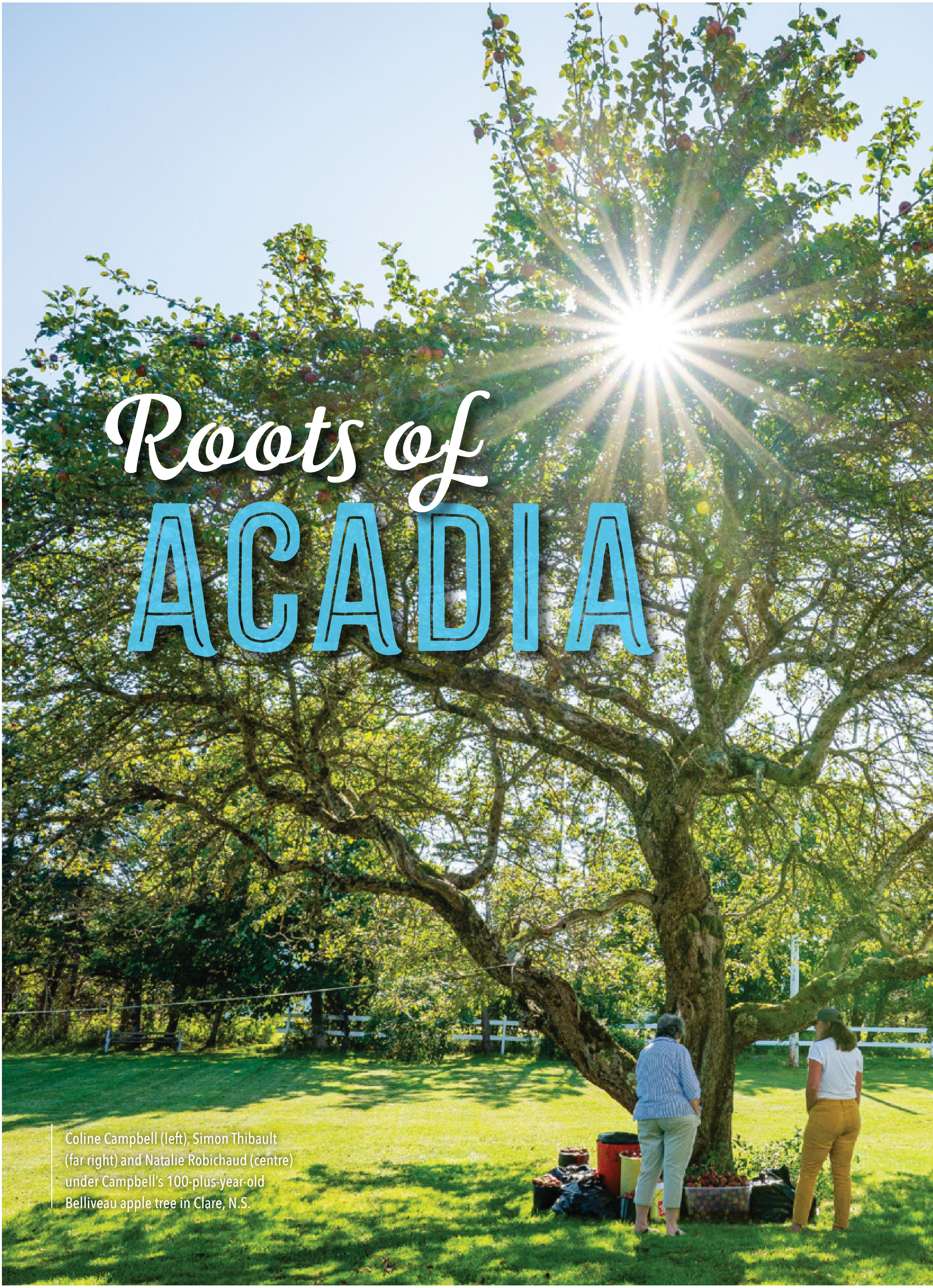
With his canoe loaded up in the back, Beaver gets into his truck, headed towards the water for another day of work. "Hopefully it hangs on," he says, looking up to the cloudy sky. "If we get a big thunderstorm now, a lot of wind, it will probably blow it all off. It's pretty delicate." He doesn't do much harvesting himself these days. The rice he gets from Rice Lake, he throws back in to increase the size of the patch. His goal is for there to be enough Manoomin in Rice Lake that all of the surrounding communities will be able to harvest there once again. "It's going to be nice if we get a full bed there. That might be about half a square kilometre in one spot, maybe a quarter in another. If we had that much rice, that'd be enough."

> **"If you can educate people about it and the value of it,** maybe they won't be so anxious to destroy it."

The effects of his work might not be seen right away, but it's a labour of love and care for the future generations in his community. "We get only 10 per cent of what's actually there, doing the two-stick method, so the rest of it just goes back into the water. That's your seed for the future," he says. "Not every seed comes up right away. They can lie dormant down there for a while, until the right conditions come along. Even if you don't see any rice this year or next year, you'll know it's all down there. Just wait for the right conditions to come along, and it'll come back."

Biinaagami is a Can Geo collaboration connecting people with the Great Lakes-St. Lawrence watershed. Learn more at biinaagami.org

Roots of ACADIA



Coline Campbell (left), Simon Thibault (far right) and Natalie Robichaud (centre) under Campbell's 100-plus-year-old Belliveau apple tree in Clare, N.S.

FOR ACADIANS IN SOUTHWEST NOVA SCOTIA, THE MYSTERIOUS BELLIVEAU APPLE IS MORE THAN A FRUIT – IT'S A TANGIBLE LINK TO THE PAST

BY **KAREN PINCHIN**
PHOTOGRAPHY BY **AARON MCKENZIE FRASER**

ON A SATURDAY AFTERNOON IN APRIL, as trees in southwest Nova Scotia pushed tender buds into a warming world, a burly, dark-haired man stood at the front of a chapel in Pointe-de-l'Église, N.S., spreading the gospel of a single apple variety. Beneath glowing stained-glass windows, more than 50 apple lovers, cider makers and history buffs had gathered to hear Simon Thibault, an Acadian cookbook author and journalist, tell the tale of an apple called the Belliveau and its connections to his own family tree.

The green-and-red-striped apple dates to the late 18th century, when its sweet, crisp flesh and long-keeping qualities helped sustain early French settlers on Mi'kmaq lands. Those settlers called themselves Acadians, an identity Thibault now wears proudly. But that wasn't always the case.

I first struck up a friendship with Thibault a decade ago, around the time he began writing his first cookbook. As two food-focused writers working in Atlantic Canada's small journalism community, we connected over culinary projects and our favourite heirloom apples as we visited farmers markets, Thibault playing disco tunes on my car's stereo. On those drives, I found myself entranced by his tales of his Acadian forebears, who were forcibly expelled from Nova Scotia by British troops in 1755 in the Grand Dérangement, or Acadian deportation. I had graduated from university with a joint journalism and history degree, followed by a French-language certificate in Quebec City to better understand our country. So why did I know so little about the Acadians?

Thibault says that's something he's encountered since he was a boy. He's more surprised when other Canadians *do* know about his people than when they don't. After all, the British were systematic in their effort to wipe out the Acadians, from dividing families to killing dissenters to robbing them permanently of lands they had lived on for generations. "The most effective genocide is one no one knows happened," Thibault told me once, with a dark chuckle. "Being Acadian means constantly having to define yourself to others, but most of all, to ourselves."

Pomme d'Api (RIGHT), a small French variety with a history as a breath freshener, at David Maxwell's hobby orchard in Middle LaHave, N.S.; a barn (BELOW) in Clare, N.S., an Acadian community settled in 1768.

In *Pantry and Palate*, Thibault crafts a culinary tale of Acadian hardship, perseverance and beauty, drawn from his collection of community cookbooks, tattered ancient pamphlets and family recipes on crinkled notecards, primarily inherited from his mother, Jeanne. Their shared urge to collect and understand, he says, has its basis in the trauma of the 1755 deportations. "And food," he says, "is the most easily digestible way to explain culture."

Near the book's end, Thibault waxes eloquent on apple pie and addresses the hazy provenance of the Belliveau, an heirloom apple grown by his parents Jeanne and Hector on their hobby farm in Clare, N.S., where he grew up. For Thibault's ancestors, he knew, apples were both pleasure and subsistence: a reliable annual crop offering a backstop against starvation in lean years. But *this* apple — laced with cultural folklore, culinary heritage and a tangible link to his genetic lineage — represented something more.

AS A FOODSTUFF, apples helped fuel the earliest conquests of lands inhabited for thousands of years by the Mi'kmaq. In 1604, merchant Pierre Dugua de Mons, military commander Jean de Poutrincourt and navigator Samuel de Champlain sailed across the Atlantic Ocean and into a river mouth between modern-day New Brunswick and Maine. To provision their journey, the French explorers bore casks of fermented apple juice, less effervescent and intoxicating than today's cider, that provided them with a shelf-stable source of hydration, calories and much-craved alcohol. Still, that first winter, at least 35 men — around half of the colonists — died of scurvy and malnutrition. "The cold was so intense," wrote Champlain in a diary entry, "that the cider was divided by an axe and measured out by the pound."

> In those early years, *every bite* counted, and apples, once established, provided a reliable food source.

Subsequent waves of French settlers brought with them tools, seeds, livestock and young fruit trees. Every bite counted during those years, and apples, once established, provided a reliable food source. Unlike the Quebecois French, who sailed deeper inland along the St. Lawrence River, the Acadians formed a distinct society along the Bay of Fundy with its own dialect, music and cuisine. They diked wetlands and grew grain, hunted game including moose and hare, and generally stayed on good terms with their Mi'kmaq neighbours. (The origin of "Acadian" likely comes from the Mi'kmaq word "cadie," for "piece of land.")

By 1612, according to Jesuit records, the Acadians' earliest trees were bearing fruit in Kespu'kwitk, which had been renamed Port Royal by the French. By the end of that century, a recorded 54 families tended a total of 1,500 fruit trees, or roughly 28 trees per family. The French botanist and surgeon Dièreville visited the outpost on his tour of Acadia and deemed it a “petite Normandie pour les pommes.”

When the British Crown claimed the region from the French under the 1713 Treaty of Utrecht, about 2,500 or so Acadians continued farming their lands after declaring themselves neutral in the conflict. Within three decades, the population of Acadia exploded to around 10,000 people. But the paired realities of the region’s agricultural productivity and the rapaciousness of empire meant the Acadians wouldn’t be safe for long.

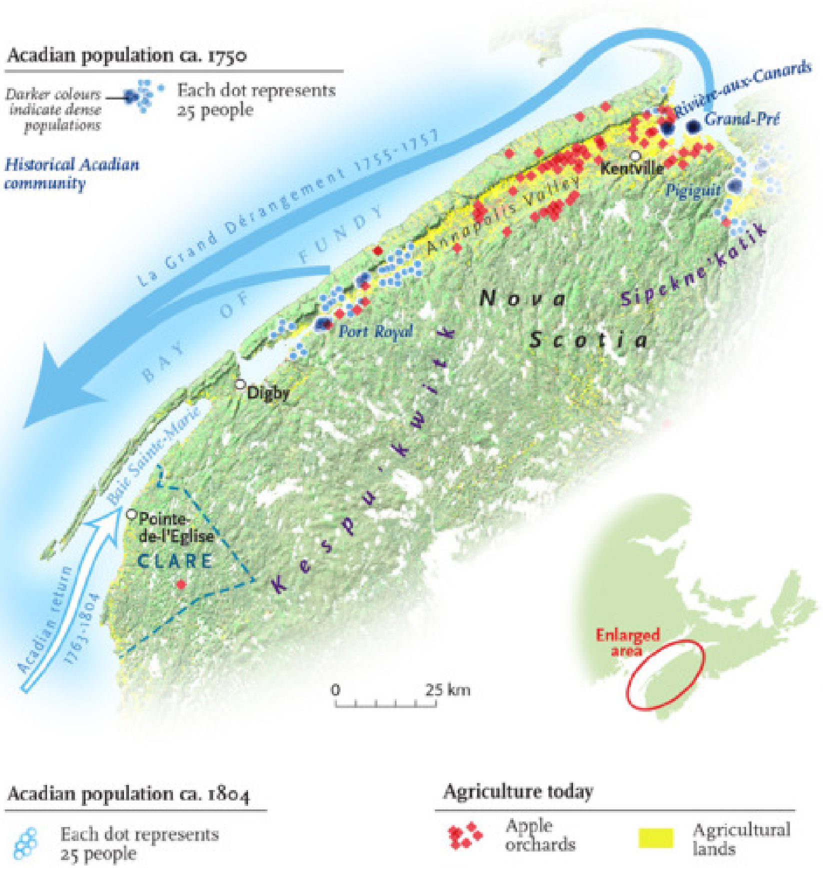
In 1755, Charles Lawrence, lieutenant governor of Nova Scotia, following orders from England’s capitalist Lords of Trade, demanded an oath of allegiance from Acadian leadership. When they refused, Lawrence ordered the seizure of the Acadians’ lands and weapons, and so began Le Grand Dérangement — the Great Upheaval, or Great Deportation. “We are now hatching the noble and great project of banishing the French Neutrals from this province,” wrote British officer John Winslow. “The part of the country which they occupy is one of the best soils in the world, and, in the event, we might place some good farmers on their homesteads.”

British soldiers forced thousands of Acadians onto overcrowded ships at gun and bayonet point from major settlements across present-day Atlantic Canada. In the melee, women carried newborns alongside men pulling carts laden with their elderly parents. Some hurriedly buried silver, legal documents and other prized possessions in the dirt, fearing robbery by British soldiers and hoping their banishment would be brief. Some fled into the woods.

Ironically, the most definitive proof of the chaos wrought in the deportation comes from detailed British paperwork taken at the time. In addition to the names of Acadians transported away from their homes, military administrators recorded the burning of 686 homes, 11 mills and two churches built over four generations. Cattle lingered near the charred remains of homes; abandoned dogs howled over the ruins.

In the frenzy of loading the ships, which didn’t carry enough food or supplies to sustain their passengers, British soldiers separated wives from husbands, children from parents. Most expected to be apart from their families for only a few days. Instead, the vessels sailed south to different destinations — from Massachusetts down to Georgia — dividing families to reduce chances of revolt. (A large number ended up in Louisiana, forming the diasporic Cajun community that lives there today.)

Other than a few attempted mutinies, the nefarious strategy worked. In moments, children became orphans, and many families shattered. Two years after the deportation, one British officer described sailing past decimated Acadian villages ringed by fields of apple and pear trees bending under the weight of unpicked fruit.


Acadian population ca. 1750
Darker colours indicate dense populations
Each dot represents 25 people
Historical Acadian community
La Grand Dérangement 1755-1757
BAY OF FUNDY
Rivière-aux-Canards
Grand-Pré
Kentville
Pigiguit
Annapolis Valley
Sipekne'katik
Nova Scotia
Port Royal
Kespukwitk
Digby
Baie Sainte-Marie
Pointe-de-l'Eglise
CLARE
Acadian return 1763-1804
0
25 km
Enlarged area
Acadian population ca. 1804
Each dot represents 25 people
Agriculture today
Apple orchards
Agricultural lands

Halifax-based Karen Pinchin (@karenpinchin) is a science journalist, chef and author of Kings of Their Own Ocean: Tuna, Obsession and the Future of Our Seas. *Aaron McKenzie Fraser (@aaronmckenzie-fraser) is an editorial and commercial photographer based in Ketch Harbour, N.S.*

MAP: CHRIS BRACKLEY. DATA: ORCHARD LOCATIONS: “DETECTION AND DISTRIBUTION OF THE APPLE LEAF MIDGE, DASINEURA MALI, IN NOVA SCOTIA, FIGURE 1” AND “DISTRIBUTION OF APPLE LEAF MIDGE INFESTATIONS IN THE ANNAPOLIS VALLEY OF NOVA SCOTIA FOR THE PERIOD 1990-1994,” EATON, B.R. AND BENT, E. THE CANADIAN FIELD NATURALIST, VOL 11, JULY-DEC, 1997. NOVA SCOTIA CIDER ROUTE MAP: CIDERNOVASCOTIA.CA/NOVA-SCOTIA-CIDER-ROUTE. ACADIAN POPULATION: “FROM THE BEGINNING TO 1800: PLATE 30, ACADIAN DEPORTATION AND RETURN,” HISTORICAL ATLAS OF CANADA I

THIS PAGE, clockwise from TOP LEFT: Simon Thibault in his family's hobby orchard in Clare; Thibault with his mother, Jeanne Thibault, amateur genealogist and family historian; Jeanne and Hector Thibault beneath their Belliveau apple tree. **OPPOSITE:** A sketch of the original Belliveau tree planted by Marie-Modeste in Anse-des-Belliveau, drawn by William Belliveau in 1909.

TO STAND in an orchard in spring, amid fluttering pink petals and myriad pollinators, is to witness procreation in real time. Each blossom is a potential future apple that, barring frost or other catastrophe, will ripen by harvest.

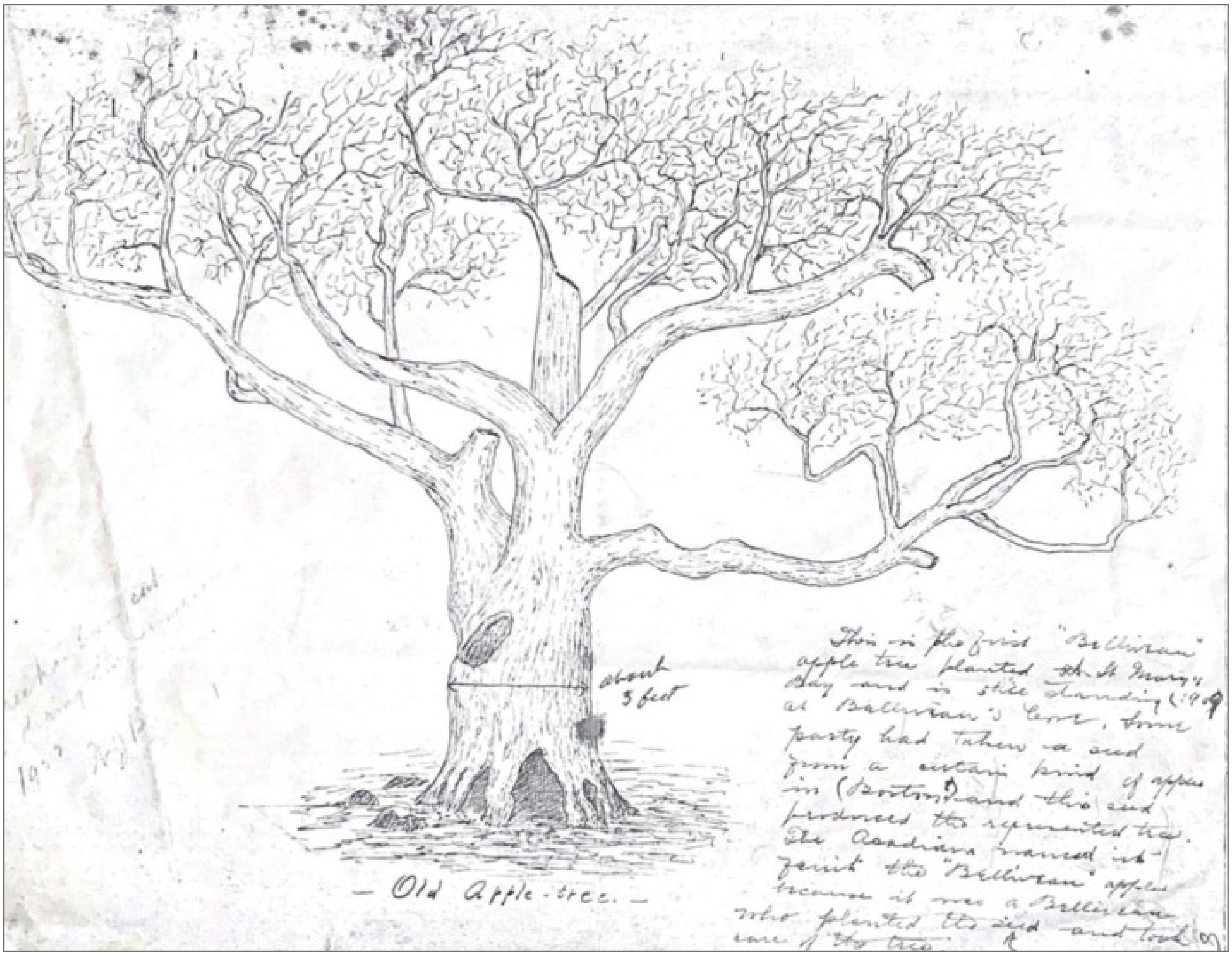
No matter the pollinating "father," all apples from a single tree will look and taste similar. But inside that fruit's seeds, bound within five stiff carpel chambers, lies a riot of heterozygous genetic material that would, if planted, result in apples with widely varying characteristics. To know what apples to expect, farmers graft twigs of each desired variety onto commercially available root balls. And so each grafted tree bears the identical genetics — and fruits — of its mother tree.

For hundreds of years, apple farmers have carefully hand-pollinated their favourite trees with the pollen from other hardy, tasty or otherwise favoured trees to see what fruit might emerge. Typically, the process is a bust, resulting in bland, mealy or intolerably tannic or unremarkable apples. Sometimes, though, those experiments hit paydirt. "Every McIntosh is a graft of a graft of the original tree that John McIntosh salvaged from the brush of his Ontario farm in 1811," writes Rowan Jacobsen in *Apples of Uncommon Character*. "Every Granny Smith stems from the chance seedling spotted by Maria Ann Smith in her Australian compost pile in 1868."

Given that apple trees can bear fruit for hundreds of years, planting an orchard bridges space and time. "Because he had thought about it as it was in that moment, with fruit on the trees and the trees in full maturity, it still contained him," writes Helen Humphreys in *The Ghost Orchard*, of standing in an orchard planted by poet Robert Frost. "The poet may die, but the poetry continues."

This single-track lineage makes the apple, in some respects, the ultimate monoculture crop. It also provides, when established through genetic testing, a tangible and profound genetic link across the centuries. "It is an intimate act, tasting an apple — having the flesh of the fruit in our mouths, the juice on our tongues," writes Humphreys, of Quaker pomologist Ann Jessop's tasting of a White Winter Pearmain apple in 1790. "I bite into the same kind of apple ... and taste what she did."

By 2019, I had left the Maritimes to study science journalism at Co-



This is the first "Belliveau" apple tree planted at St Mary's Bay and is still standing (19[illegible] at Belliveau's Cove, Some party had taken a seed from a certain kind of apple in (Boston) and this seed produces the represented tree. The Acadians named its fruit the "Belliveau" apple because it was a Belliveau who planted the seed and took care of the tree.

ILLUSTRATION: COURTESY PAULINE BELLIVEAU

lumbia University in New York City, although Thibault and I stayed frequently in touch. Inspired by the Acadians, I wrote an essay on the myths and truths of the expulsion seen through the lens of Simon Thibault's family. While researching it, I stumbled across the Belliveau apple — and a mystery.

One 1932 tourism pamphlet about Acadian pomiculture, written by an ancestor of Thibault's, recorded Belliveau apples showing up in St. Mary's Bay, N.S., around 1769, brought there from Annapolis Royal by "one Mrs. Frederic Belliveau." Undeterred by the era's misogynistic naming convention, and with access to Jeanne Thibault's records and modern-day genealogical websites, I read, cross-referenced and sketched family trees until I finally found Mrs. Belliveau's birth name: Marie-Modeste Leblanc. She had been 11 years old — only a few years older than my son — when she was deported from Nova Scotia alongside her family.

By the mid 1760s, the British permitted some Acadians to return to the region, although they didn't let them resettle on their lush former lands. In 1768, 24-year-old Marie-Modeste married Frederic Belliveau, and the pair headed westward from Annapolis Royal to Baie Sainte-Marie, or St. Mary's Bay, a French-speaking Acadian community nestled along a long, narrow inlet. There, Marie-Modeste planted a single apple tree, from either seed or scion taken from her family's forsaken homestead.

Discovering *Marie-Modeste's* name transformed how I saw the Acadian deportation.

Discovering Marie-Modeste's name transformed how I saw the Acadian deportation. Here was a real flesh-and-blood woman before me, someone who overcame inconceivable hardship and survived. I imagined her standing on a windswept ledge, a loom-woven cotton skirt whipping against her ankles, holding a Belliveau apple. I pictured her biting into it, drawing sustenance from it, her life and its life intertwining like DNA's genetic helix, proof of the strength of a matrilineal line against historical churn and oblivion.

Soon after the deportation, even without the Acadians' stewardship, their former orchards thrived. As newly arrived British and early American settlers took over the Acadians' lands, they used the "thickets of lusty seedlings" that had sprung up in aban-

Coline Campbell (LEFT and RIGHT) picks apples from her Belliveau apple tree, which she has honoured in her kitchen with folk art. A few bushels of apples (BOTTOM) harvested from her tree in Clare, N.S.

doned meadows in the Acadians' absence as root stock, grafting scions of their own favourite varieties onto their shoots. For the next 200 years, those trees formed the basis of an apple industry that helped fuel the British Empire.

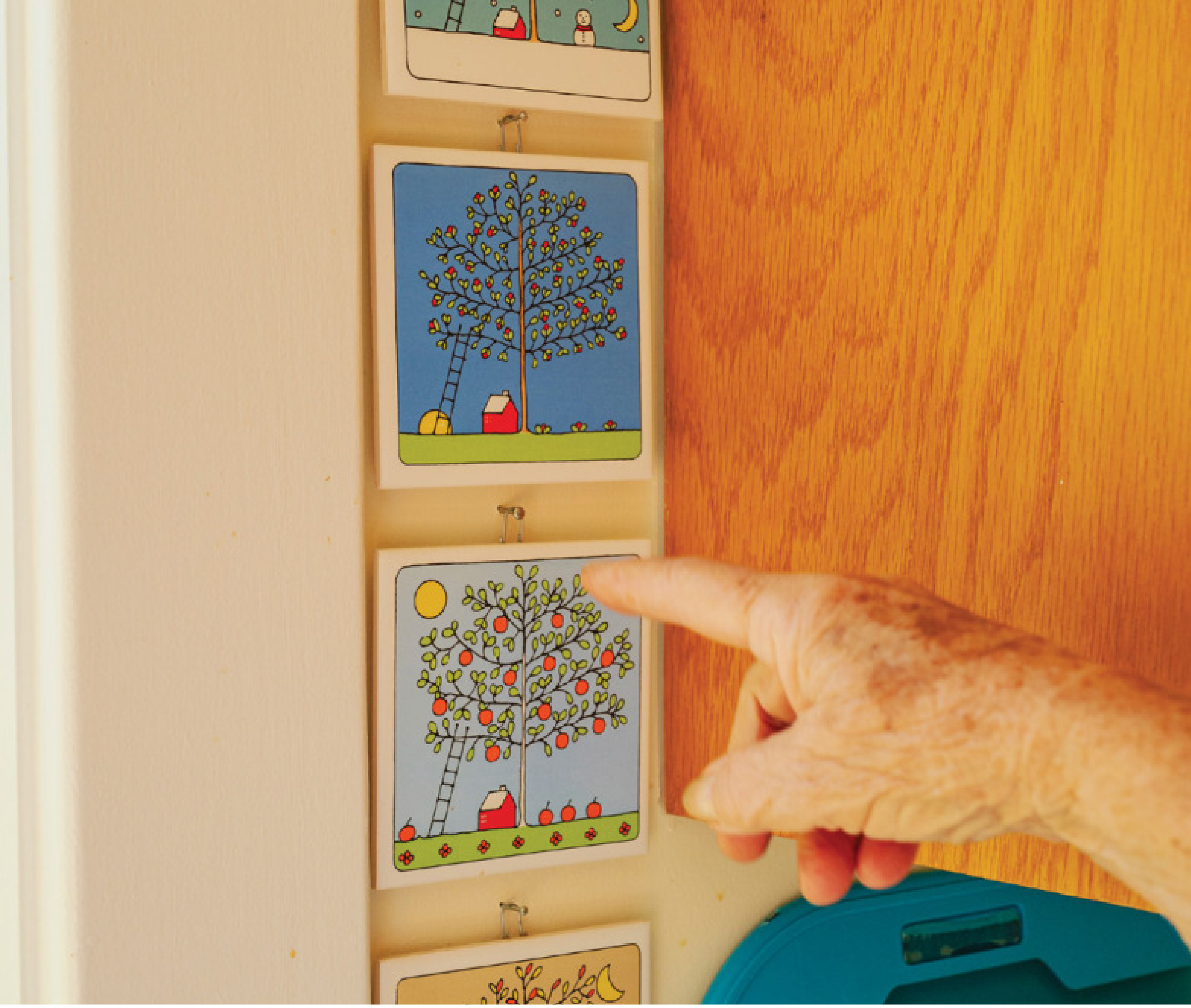
In 1862, Nova Scotian growers entered a slate of apples into competition at the London Horticultural Society show, where "no less than eight medals were awarded them, one of silver."

As growers pursued efficiency and productivity with a goal of driving down costs and, by extension, apple price, they winnowed varieties planted in their orchards, focusing on popular varieties like Gravenstein, McIntosh and Red Delicious. Large orchardists bought smaller producers, felled old varieties to graft new ones onto existing rootstock, and countless apples disappeared. In 1929, Marie-Modeste's original Belliveau tree was felled.

By the early 1940s, as Canada joined the fray of the Second World War, apple shipments to England plummeted, quickly demolishing demand. Between 1935 and 1939, Nova Scotia's annual production of the fruit peaked at around six million bushels; by 1963, it was half that. It's impossible to know how many heirloom varieties were lost in the attrition, but also very probable that some of those felled trees that were ripped out to make way for grape vines — the region's new burgeoning industry — were Belliveaus.

Given that *apple trees* can bear fruit for up to hundreds of years, planting an orchard **bridges space and time.**

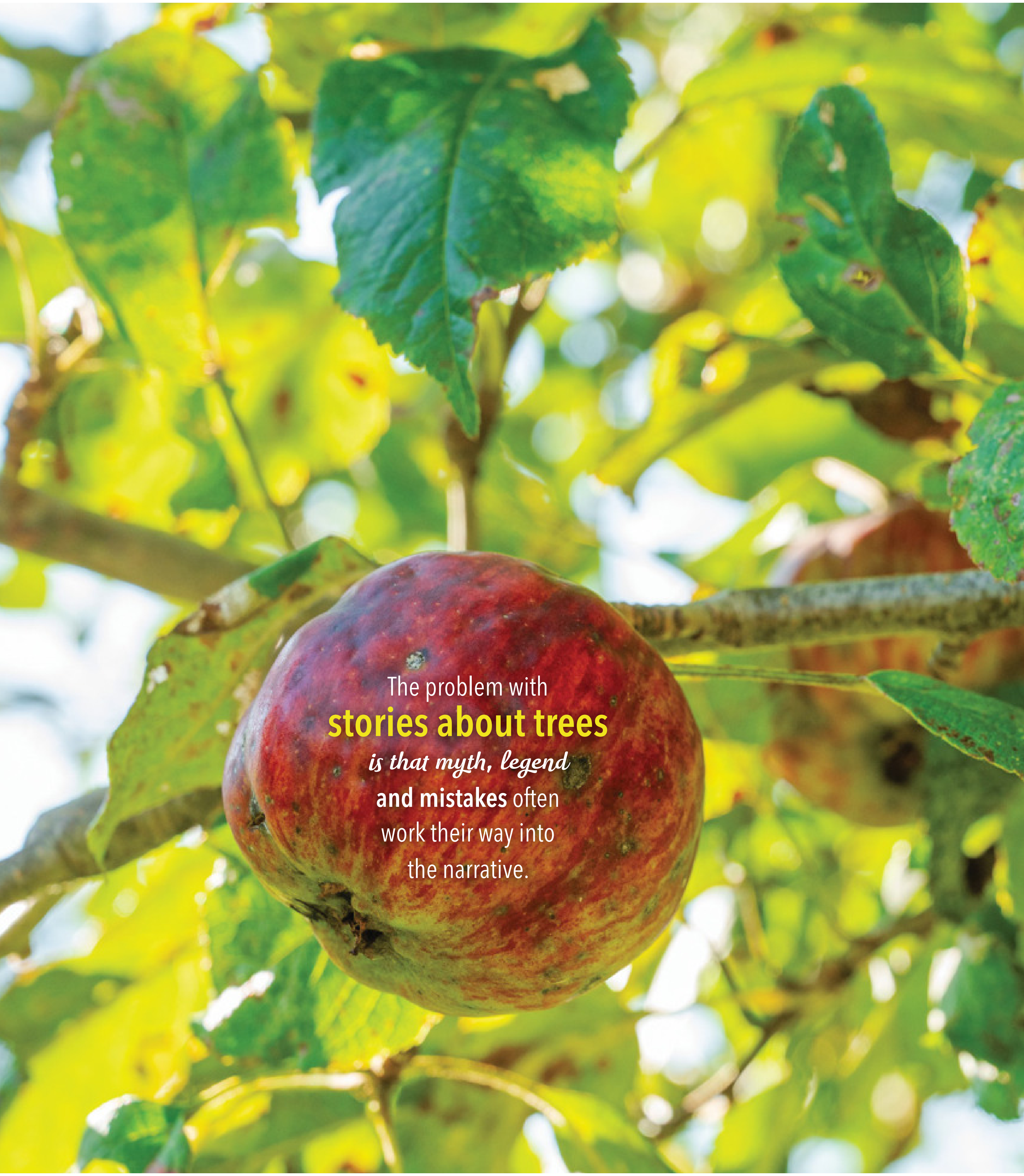
Sitting in a musty-smelling Manhattan basement, with proof of Marie-Modeste and the Acadian deportation scattered around me, I wondered: with only a handful of Belliveau trees remaining, were Thibault and his Acadian neighbours doomed to lose yet another tangible link to their past?



FOR RETIRED emergency room doctor David Maxwell, who started an antique apple orchard outside Lunenburg in the late 1990s, a Belliveau was the perfect addition to his collection, which includes varieties such as the Fameuse and Pomme d'Api.

In spring 2017, Hector Thibault sent Maxwell an envelope containing two tiny shoots ready for grafting. To his delight, they took well and grew quickly, a promising glimmer that hinted at why, hundreds of years prior, the Acadians had such luck propagating their own Belliveaus.

For Maxwell, that the apple looked fated for extinction seemed like a solvable problem. He reached out to New Brunswick's Verger Belliveau orchard, which is owned by a distant Belliveau cousin, to see if they were interested in helping to keep the variety alive. To his chagrin, they weren't.



The problem with **stories about trees** ***is that myth, legend*** **and mistakes** often work their way into the narrative.

The Belliveau apple (LEFT), preserved now in just a handful of orchards, was prized for its crisp flesh and long-storing capabilities. The home of Coline Campbell (ABOVE) in Church Point, Clare, N.S.

In 2022, at his wit's end, Maxwell sent Belliveau scions to his friend and Ontario heirloom apple grower Bill O'Keefe, desperate to find another home for the Belliveau's genetic material. On his farm, O'Keefe Grange, Bill and his wife Lyn have amassed one of Canada's largest collections of rare apples, numbering over 560 varieties. Again, the hardy cuttings took swiftly.

In 2023, his last season before retirement, University of Guelph researcher Paul Kron arrived on the O'Keefe Grange for his final year of work on the Ontario Heritage and Feral Apple Project, a research program dedicated to identifying and preserving the genetics of soon-to-be-lost and obscure varieties. He took a sample of a young leaf from one of the farm's Belliveau trees and placed it in a labelled paper envelope. Back at his lab, he pulverized the sample into a slurry to prepare it for genetic testing and then analyzed the tree's DNA. The result, according to Guelph plant biology professor Brian Husband, showed

a slim possibility that Fameuse, an old French Canadian variety, could be related to the Belliveau. This clue provided a tiny glimpse into the apple's genetic lineage. If orchardists want to have their Belliveau trees propagated by commercial growers, a "Belliveau" genotype will have to be identified and standardized.

Around that time, Thibault and I started working together to learn more about Marie-Modeste's almost lost apple. The problem with stories about trees, we learned, is that myth, legend and mistakes often work their way into the narrative. We visited the Annapolis Royal Historic Gardens, which is located on lands owned by the Belliveau family before the deportation. They have a few Belliveau trees, and every time they post online about them, they receive a trickle of comments from curious Acadians and apple growers who want to obtain one.

As we dug through archives and family charts, assisted by Jeanne Thibault, we stumbled across something that added another layer of meaning to this tale. What we found in the genealogical records was that, fittingly, Thibault's mother descended from Marie-Modeste. I caught myself looking back through pictures of Jeanne Thibault and her own mother, Rosalie, searching for a sign of what Marie-Modeste looked like. Was she short, like Jeanne? Did she have the same curly hair? Her mischievous smile? And could she have imagined that, generations after her death, her apple tree would feed her distant relations?

FOLLOWING HIS TALK on that mild spring day, Thibault invited cider-maker Denise Flynn to take the stage.

The sun sets over Belliveau Cove Lighthouse (ABOVE) overlooking St. Mary's Bay. Belliveau Cove is a historic Acadian community, established in 1768. David Maxwell (RIGHT) in his antique apple orchard.

Flynn, the Acadian owner of the Corberrie Cider Company in Clare, brought along 30 twiglike scions taken from an ancient Belliveau tree that grows in the yard of another descendent of Marie-Modeste, Coline Campbell. In the hazy light of the stained-glass windows, as the afternoon sun sank in the sky, Flynn showed the assembled crowd of curious community members and passionate orchardists how to graft scions onto either a new rootstock bulb or a branch of an existing apple tree.

By the time the event ended, all the scions were claimed by enthusiastic future caretakers of new Belliveau trees. Perhaps, Thibault dreams, Flynn could one day make a single-varietal cider from the traditional apple.

As for the future, Thibault plans to send Belliveau leaves, and possibly others taken from a handful of mystery trees some believe to be Belliveaus, to a lab in Oregon for genetic testing. Knowing whether the trees are identical, and even which parent trees were crossed to produce the Belliveau, he says, is the next step in protecting Marie-Modeste's pomological legacy and in making our research available to future generations.

"This apple is an example of how a community sustains not only itself in terms of nutrition but also the collective brain trust of distributing knowledge," Thibault says. "Which is what, as Acadians, has ensured our survival." ❈

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JONI MITCHELL HONOURED WITH RCGS GOLD MEDAL

Joni Mitchell holds the Society's Gold Medal close to her heart.

On Canada Day, beneath the shimmering emerald green canopy of an old growth rainforest, the RCGS bestowed its highest honour on one of the most influential songwriters of the late 20th century: the legendary Joni Mitchell.

The intimate gold medal ceremony took place in a wooden amphitheatre at B.C.'s Ruby Lake Resort — a spectacular Sunshine Coast property featuring ancient western redcedar trees, a sparkling, swimmable lake and a protected lagoon which is home to beavers, Canada geese and painted turtles.

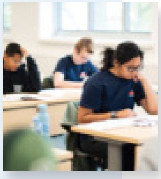
Resplendent in an embroidered sapphire blue velvet pant suit, Mitchell sat centre-stage on an intricately carved wooden throne and listened intently as Shíshálh Nation member Candace Campo welcomed people to the beautiful Shíshálh homeland. "On behalf of the Shíshálh people, it's our honour to be part of this ceremony — the ceremony for Joni Mitchell, who is a storyteller, a representative of our community and our country and who stands behind a truth that we are all proud of."

The collective admiration for Mitchell — known for her uncompromising artistic integrity and environmental and human rights activism — was palpable as RCGS CEO John Geiger took the stage. Mitchell has written and performed songs that evoke a sense of place for people everywhere. "They've been as 'constant as a northern star,'" Geiger said, quoting *A Case of You*. "The impact of Joni's talent extends far beyond Canada's border, yet Canada remains there, still, at the centre of it all. By your gift, then, Joni, you have embodied the Society's mission to make Canada better known to Canadians and to the world, and reminded us all that we have many great rivers yet to skate on."

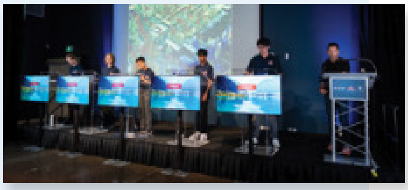
The artist held the award close to her chest. "Well, this is a great honour. It's a beautiful piece, too. Thank you very much. I'm proud of this," said Mitchell.

—*Kim Gray*

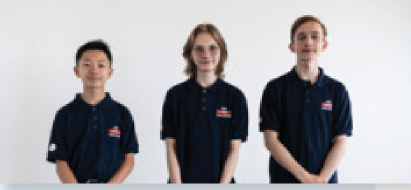
SOCIETY BRIEFS



This year marked a major milestone for one of Canada's most beloved student competitions — the 30th anniversary of the **Canadian Geographic Challenge**. More than 10,000 students in Grades 4 to 10 from across the country participated in this year's Challenge.



The **top 20 senior students** advanced to the national final, held in Ottawa from May 31 to June 2 — the first in-person final since the COVID-19 pandemic. Over the course of an action-packed weekend, finalists tackled fieldwork activities, written exams and collaborative discussions on global issues. **Mark Cherwick**, a Grade 9 student from St. John's, claimed the title of National Champion after a thrilling final round. He was joined in the top five by **Eric Yuan (Calgary), Mason Slobodin (Ottawa), Jevon De Silva (Markham, Ont.) and Edward Clark (Hamilton, Ont.)**. The Society gratefully recognizes the support of Kensington and the Trebek Family Foundation.



CLOCKWISE FROM TOP LEFT: DAVID GRAY; LINDSAY RALPH/CAN GEO

FEATURED FELLOW: TODD SAUNDERS

Saunders, who is based in Norway, is known for his use of natural materials and respect for the land on which his projects stand.

COURTESY SAUNDERS ARCHITECTURE

Everything Todd Saunders learned about building, he says, he got from the summer he spent in his youth building a log cabin with his family in Gander, N.L. Together, they cut the logs, stripped the bark, drew the designs, built a model — the same process he follows today. At his architecture firm, Saunders now designs buildings that are deeply rooted in their surroundings, including the award-winning Fogo Island Inn in Newfoundland and the Illusuak Cultural Centre in Nain, Labrador.

On designing for a landscape

In Newfoundland [with the Fogo Island Inn], I knew that place like the back of my hand. I knew exactly when the seasons changed, what the weather was like. I'll always build a physical model with the exact contours — every foot of land is 25 centimetres on the model. We'll build a one-to-one mock-up of every room in the whole building. We'll make prototypes of the quilts, the headboards, the stools; we're constantly testing out the reality. And that's back to the way I learned, building that little cabin.

On building the Fogo Island Inn

Zita Cobb, the philanthropist that started it, interviewed about 30 to 40 architects, and she didn't feel they were coming with what she was looking for. When we met, we had a very good conversation. What came out of it was hospitality — that's what Newfoundlanders are known for: they give you the shirt off their back. The inn was based on a lot of aspects from Newfoundland homes. It's not really a hotel. I once asked Zita, "Why did you choose me?" She said, "you had as much to lose as I did." My mom's from a huge Newfoundland family of, I think, 13, and dad's from nine. So if I had messed that place up, I would have been ousted. I really gave everything to that project.

On advice for young architects

Just be yourself. I presented a house during a lecture once, and one of the young professors kind of got on me because I placed the front entry into the kitchen. Norbert Schoenauer, a professor of mine, jumped in and asked me where I was from. I said Newfoundland. "Where do you enter a house in Newfoundland?" he asked. I told him, "the kitchen." He then went on this rant towards this other professor about people designing where they're from. "If you enter into the kitchen in Newfoundland, you keep doing that." It gave me a sense of confidence in the architecture from where I grew up. So, that's my advice — do your thing, get to know yourself and cultivate your own inner garden as a person.

On future projects in Canada

Quiet architecture is what I'm really interested in. I think there's an opportunity to do some really cool off-grid architecture in Canada, and they haven't really pulled in architects for them, whereas in Scandinavia they have. Right now we're working on a sauna in a forest in Sweden, a place for someone to sleep in silence. A library in a forest in Canada would be my dream project.

—Interview by Stephanie Taylor

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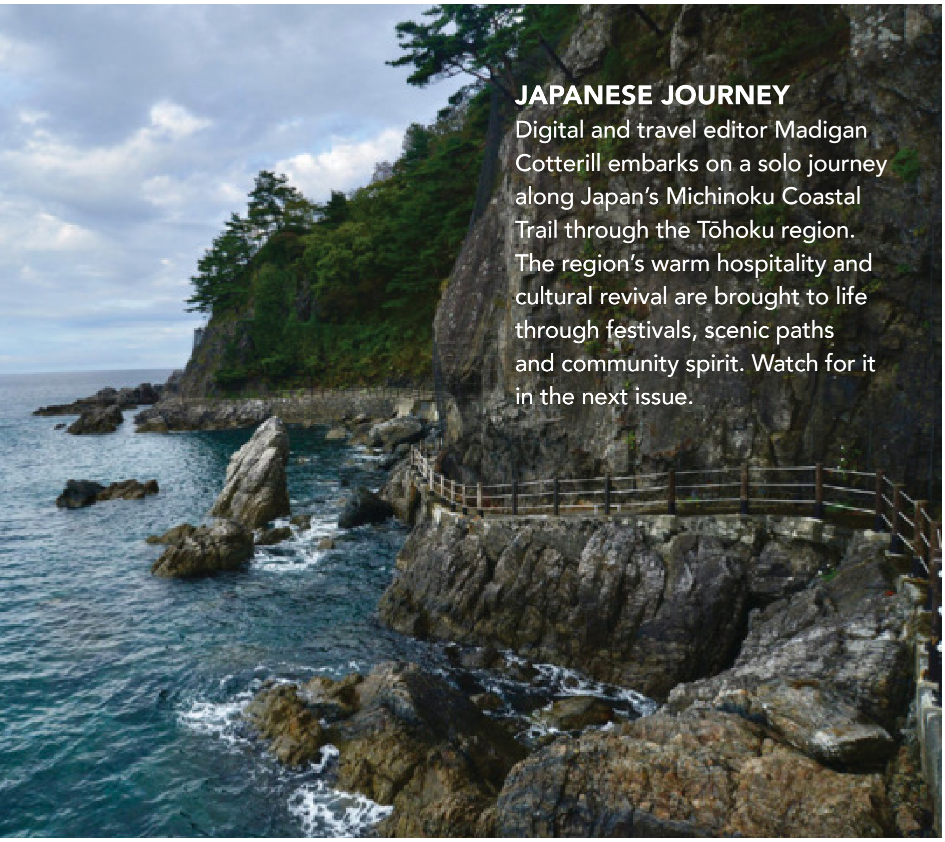

JAPANESE JOURNEY

Digital and travel editor Madigan Cotterill embarks on a solo journey along Japan's Michinoku Coastal Trail through the Tōhoku region. The region's warm hospitality and cultural revival are brought to life through festivals, scenic paths and community spirit. Watch for it in the next issue.

WONDER LAND

Towering cottonwood trees, spikes of purple lupines in swaying grasslands, marshes singing with migrating birds. The Carolinian zone in southwestern Ontario is Canada's most biodiverse region — and one of the most threatened. In the next issue, managing editor Michela Rosano and photographer Colin Boyd Shafer reveal the wonders of the Carolinian and the people trying to save it.

ADVENTURES IN NIBIISCHII

Nibiischii Park, Quebec's first national park operated by a Cree community, is a place you can visit in all seasons. Here in "the land of water," hunters, trappers and Talleymen from the Cree Nation of Mistissini live in relation with the land the way their ancestors always have. Read about it in the travel section of the November/December issue.

PHOTO FINISH

Paws up for the winners of our annual wildlife photography competition! From nearly 10,000 entries, an expert panel of judges, including award-winning photographers Ryan Tidman, Jenny Wong, John E. Marriott and members of Can Geo's editorial and design teams, identified the best captures of Canadian flora and fauna. Check out the winning images in our next issue.

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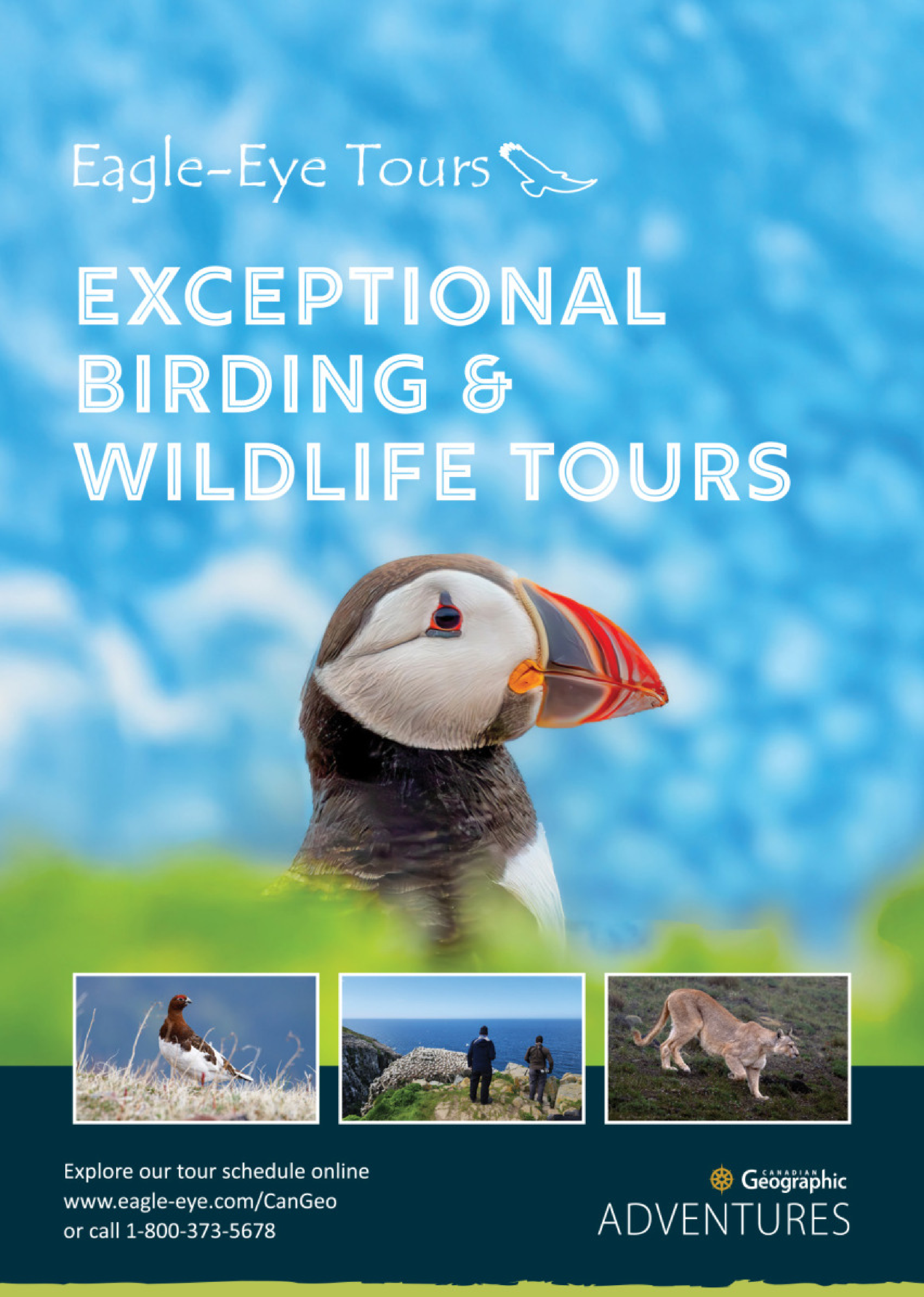

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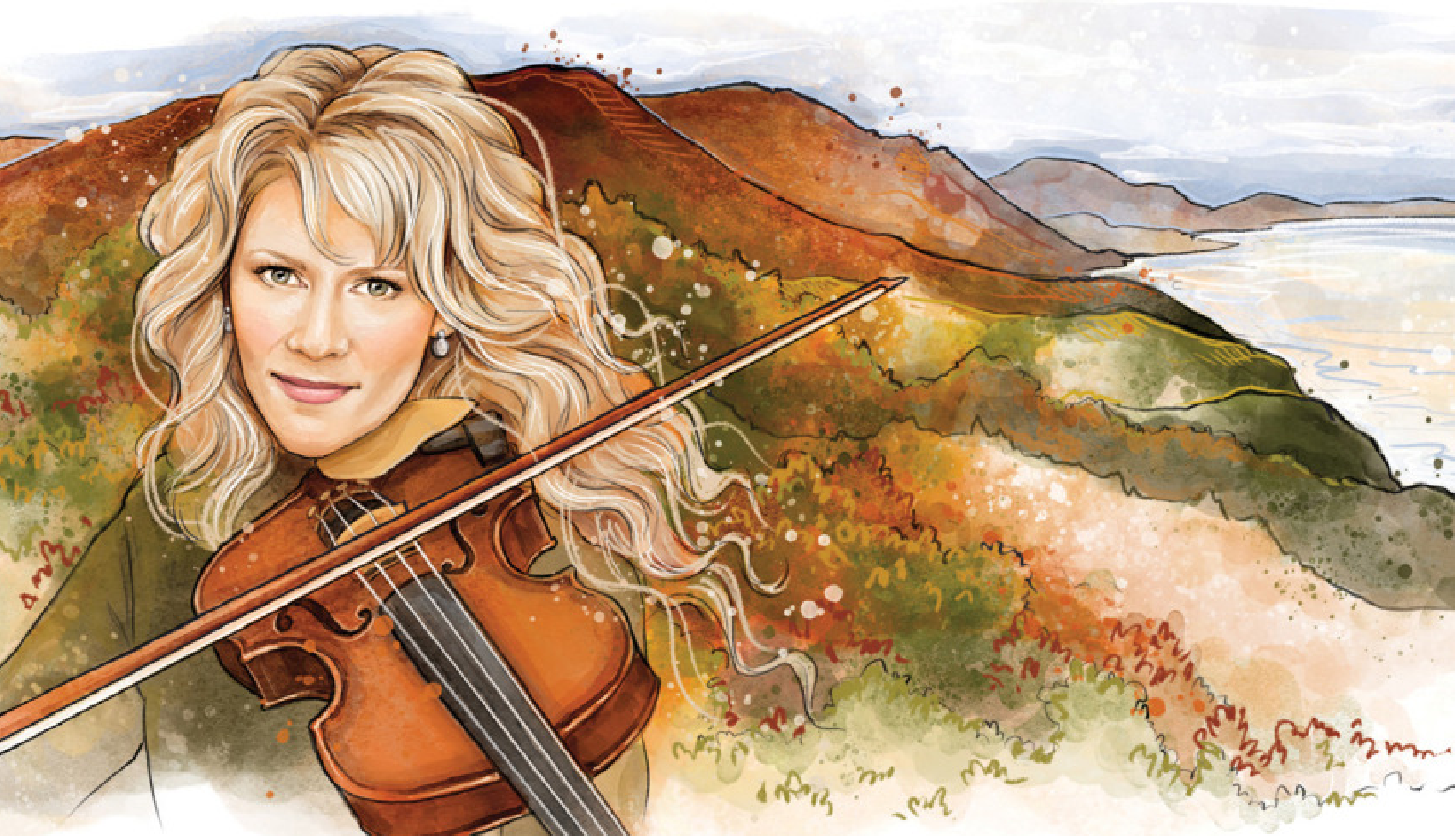

Natalie MacMaster

The globally acclaimed fiddler on how Cape Breton has shaped her life

When I think about all the love I've received in my life, from my youth in a tight-knit family, to discovering my passion for music, to meeting my husband and starting our own family of nine, it all started in Cape Breton.

I grew up richly immersed in fiddle culture, square dances, the Gaelic language and gatherings. There were weddings and funerals, celebrations and sorrows. We'd have house parties with an abundance of food and drink, where I got to spend time with my relatives and appreciate the grandness of my extended family. People were always in good cheer, and there would be a lot of laughter. It was an environment that was so harmonious. I didn't realize it at the time, but it was profoundly beautiful.

I have come to believe that the art reflects the artist, and when I look at Cape Breton Island, I believe it reflects the love of God. The rolling hills are sprinkled with pure, unmanicured vegetation. Wild roses line the roads. Alongside it, the ocean is so grand and life-giving, providing fish of the sea for the fisherman. It's all-surrounding and all-encompassing. In a place with no coastline, I can begin to feel claustrophobic, but in Cape Breton, I have always felt I can get to the edge of the Earth.

When my husband and I got married, the bishop told us in his homily that two things in this world are eternal: music and love. When I return to Cape Breton, I am grateful for the fiddle culture that still exists and thrives there, knowing how deeply it shaped me. ❂

—*as told to Samantha Pope*

Cape Breton, or Unama'ki, is the ancestral and unceded territory of the Mi'kmaq — and is covered by the Treaties of Peace and Friendship, which were signed by the Mi'kmaq and Wolastoqiyik with the British Crown.

CHELSEA PETERS

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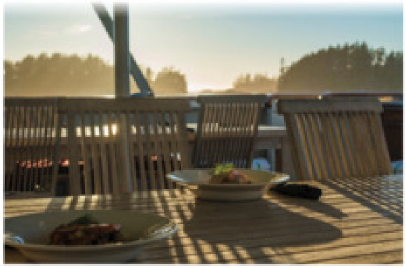

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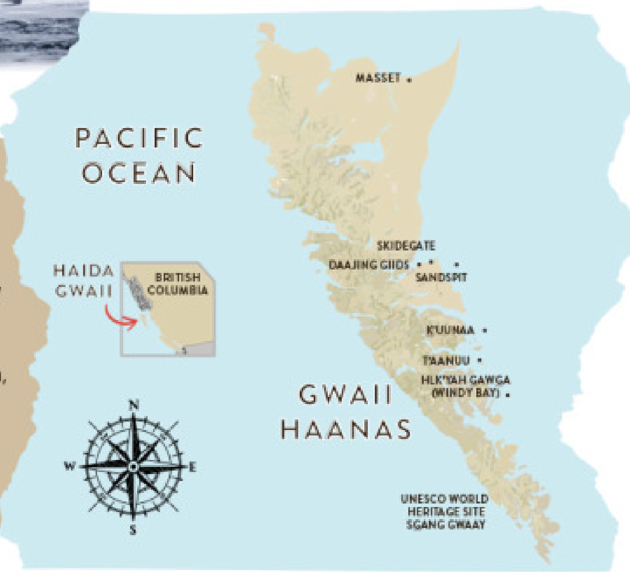
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